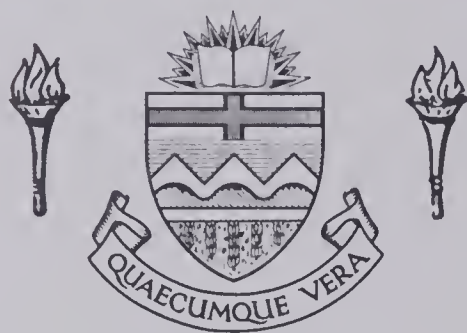


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IMPLICATIONS OF IMPROVED INFORMATION

ON MARKET PERFORMANCE

by

DONALD GRANT DEVINE

A THESIS

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The undersigned certify that they have read and recommend to the Faculty of Graduate Studies for acceptance a thesis entitled "Implications of Improved Information on Market Performance," submitted by Donald Grant Devine in partial fulfilment of the requirements for the degree of Master of Business Administration.



ABSTRACT

The implications of improved information on market performance are widespread, encompassing social, economic, and political elements of modern society. Industrialization has changed the nature of social values and, consequently, the means required for contemporary market adjustment. An applicable theory of information to adequately define and subsequently correct deficiencies in market intelligence has yet to be developed.

Empirical observations in the retail food industry indicate that market intelligence can be improved. More informative communication between market participants is widely desired. Additional information in the system facilitates potential improvements in pricing efficiency, operational efficiency, and market performance. A better informed public environment tends to induce a higher degree of social responsibility into the industrial community. It is contended that the mechanism, in part, required for continual social, economic, and political adjustment is a more informative communication system.

TABLE OF CONTENTS

	Page
ABSTRACT	iii
LIST OF TABLES	vi
LIST OF FIGURES	vii
CHAPTER	
I. INTRODUCTION	1
The Food Industry	1
The Role of the Market	1
Information--Power and Control	2
The Problem	3
Objectives of the Research	3
Scope of Thesis	4
II. MARKET INFORMATION AND THE CHANGING PRICE SYSTEM	5
The Traditional Mechanism and Recent Departures	5
The Consequence of Structural Shifts	7
III. INDUSTRIAL ORGANIZATION I: MACROECONOMIC CONSIDERATIONS	9
An Introduction	9
The Central Inquiry	9
The Original Emphasis and Reform	11
The Demands of Industrial Reform	13
IV. INDUSTRIAL ORGANIZATION II: MICROECONOMIC CONSIDERATIONS	15
Market Efficiency - The Workable But Improvable Trade-Off	15
The Power Potentials - Efficiency and X-Efficiency	16
Price Flexibility vs. Price Efficiency	17
Performance Criteria In Industrial Organization	18
Criteria for Price Efficiency Evaluation	19
Advertising and Product Variation	20
Differentiation - The Critical Path	22
V. THE EMPIRICAL SETTING - A CASE HISTORY	25
The Rational Market	25
The Pilot Study	25
Market Observations	28
Contingent Recommendations	33

CHAPTER	Page
V. (continued)	
1970 - The Reactionary Market	35
The Need for Current Information	38
VI. THE RELATIONSHIP BETWEEN MARKET INTELLIGENCE, EFFICIENCY, AND PERFORMANCE	44
Price Efficiency Evaluation	44
Examination of the Original Hypothesis	47
VII. CONCLUSIONS AND RECOMMENDATIONS	54
Summary and Implications	54
Limitations and Research Recommendations	57
SELECTED REFERENCES	60
APPENDICES	63
A	64
B	74
C	97

LIST OF TABLES

Table	Page
1. Food Items Priced in 1969 Survey	64
2. Weighted Price Index Based on Aggregate Value of Per Capita Food Consumption by Item	66
3. Price Frequency Analysis	68
4. Frequency Analysis of Price Discrepancies in Beef Products	69
5. Names and Addresses of Retail Stores in 1969 Price Survey	73
6. Food Items Priced in 1970 Survey	74
7. Names and Addresses of Retail Stores in 1970 Price Survey	76
8. Retail Food Price Analysis, Week Ending March 6 and 7	83
9. Retail Food Price Analysis, Week Ending March 13 and 14	84
10. Retail Food Price Analysis, Week Ending March 20 and 21	85
11. Retail Food Price Analysis, Week Ending March 27 and 28	86
12. Retail Food Price Analysis, Week Ending April 3 and 4	87
13. Retail Food Price Analysis, Week Ending April 10 and 11	88
14. Retail Food Price Analysis, Week Ending April 17 and 18	89
15. Retail Food Price Analysis, Week Ending April 24 and 25	90
16. Retail Food Price Analysis, Week Ending May 1 and 2	91
17. Retail Food Price Analysis, Week Ending May 8 and 9	92
18. Retail Food Price Analysis, Week Ending May 15 and 16	93
19. Retail Food Price Analysis, Week Ending May 22 and 23	94
20. Retail Food Price Analysis, Week Ending May 29 and 30	95
21. Retail Food Price Analysis, Week Ending June 5 and 6	96
22. Retail Food Price Analysis, Week Ending June 12 and 13	96
23. Retail Food Price Analysis, Week Ending June 26 and 27	96

LIST OF FIGURES

Figure	Page
1. Total Raw Price Index, All Stores, Over 11 Weeks	27
2. Total Weighted Price Index for Stores in Underprivileged and Affluent Sectors	30
3. Price Level and Advertising Level Ranked Firm A	32
4. Comparison of Price Levels Firms A, B, F, and E	39

CHAPTER I

INTRODUCTION

The Food Industry

The food industry is a very important part of Canadian life. All Canadians, from producers to consumers, influence and are influenced by the food industry. Consequently, food is Canada's largest industry, providing over six billion dollars annually to Canadian food retailers alone.¹ The number of annual exchange transactions at the retail level approach infinity. As a result of its dynamic and diverse environment the retail food market provides ample opportunity for experimental research in pricing and market information systems.

The Role of the Market

Theoretically the market operates to attain equilibrium or specifically to ensure that the quantity demanded equals the quantity supplied for each resource and each commodity.² The converging mechanism in the market is the price system, transmitting the information required for market adjustment. Assuming all participants have adequate, equal, and honest information, the market potentially clears itself. Inadequate or imperfect knowledge limits the market's ability to function; the result may be either excess supply or demand. Similarly unequal

¹ Canada Dominion Bureau of Statistics, Canada Yearbook (Ottawa: Queen's Printer and Controller of Stationery, 1968), p. 895.

² C. E. Ferguson, Microeconomic Theory (Homewood, Illinois: Richard D. Irwin, 1966), p. 360.

distribution of information among buyers and sellers can alter the relative bargaining positions because market adjustment and potential equilibrium are restricted in the light of uncertainty.

Information--Power and Control

Information, associated with uncertainty reduction, is the synaptic impulse of the central nervous system in a capitalistic environment. Despite its slum dwelling in the town of economics, information is a valuable economic resource, for knowledge is power.¹ The judicious use of market information is one, if not the, central problem of contemporary industrialization.²

Information and market adjustment are associated with market power by defining power as the scope of significant choice available to an individual participant.³ Market power is thus generated through the accumulation of knowledge, knowledge that enhances the range and scope of effective adjustment alternatives. Acceptance of the premise that oligopolistic markets are the rule rather than the exception leads to the conclusion that the market activities of one participant exert pressures on relevant competitors. As a result, full knowledge and understanding of pertinent market conditions allow immediate and accurate response, while inadequate knowledge not only limits alternatives but significantly decreases the probability of participants making the correct decision.

¹ G. S. Stigler, "The Economics of Information," The Journal of Political Economy, LXIX, No. 3 (June, 1961), 213.

² J. A. Howard, Marketing Theory (Boston: Allyn and Bacon, Inc., 1965), p. 122.

³ C. Kaysen, "The Corporation: How Much Power? What Scope?" in Modern Organizations, ed. by A. Etzioni (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1969), p. 197.

Knowledge--provided it is timely and to the point--offers power and control. A manager can quickly suit his actions to his aims when he knows what is going on in his business almost as soon as events occur. But he must also understand--with comparable speed--what is happening in the marketplace in order to make really sound decisions.¹

The delineation of environmental information into both micro-economic and macroeconomic components is necessary for effective scientific research, but the relationship between the two components is the critical factor. It is the effective coordination of internal capabilities with the *knowledge* of external opportunities that finally determines market performance.

The Problem

Effective coordination in the market requires timely informative communication between participants. Suboptimal performance is often caused by market ignorance resulting from inadequate dissemination of information. Insufficient knowledge and poor communication are among the major deficiencies restricting efficient performance in contemporary markets. There is a basic need for the perpetual improvement of information collection, analysis, and dissemination in the system.

Objectives of the Research

The objective of the thesis is to monitor the environmental response to increased and improved information dissemination. Producer, consumer, and competitor reactions, as well as price level changes, are evaluated to determine the effects of changing market intelligence. It is hypothesized that:

¹ O. W. Tuthill, "The Thrust of Information Technology on Management," Readings in Marketing Information Systems: A New Era in Marketing Research (Boston: Houghton Mifflin Co., 1968), p. 201.

- (1) The market will readily receive and rapidly respond to additional information.
- (2) Exchange efficiency is positively correlated with the level of market intelligence and consequently increases with more informative communication.
- (3) Exchange and operational efficiency can be positively correlated thus simultaneously improved even under concentrated market conditions.
- (4) Improved information and its dissemination liberates much of the competitive potential existing in the market.
- (5) A highly informed public or market environment enhances the degree of social responsibility existing in the industrial community.

Scope of Thesis

Recent departures from original price mechanisms will be outlined in relation to shifts in market power and industrial responsibility. Industrial organization is examined at the macroeconomic level to determine current changes in public policy. Microeconomic criteria are analyzed and subsequently outlined for measuring market efficiency and industrial performance. A case history of the Edmonton retail food market will describe market activities and empirical research findings as they occurred from March, 1967, to June, 1970. A critical examination of recent market responses to changing levels of information is made with respect to the basic hypotheses initiating the research. Conclusions and recommendations regarding future research are outlined in the final paragraphs.

CHAPTER II

MARKET INFORMATION AND THE CHANGING PRICE SYSTEM

The Traditional Mechanism and Recent Departures

Agriculture traditionally represented the ultimate in the use of the open or "free" market system. Agricultural commodities were produced using private resources and sold on the open market to the highest bidder. Prices were determined in the system as a direct result of numerous exchange transactions. Market knowledge, albeit imperfect, was widely disseminated among market members because the unmerciful law was participate or perish.

The system has changed. Exchange transactions have declined in number, while the power to influence market conditions has become concentrated in the hands of fewer and fewer participants. Departure from the original mechanism stems from three key elements: one, increasing size and power of many firms notably at the retail level; two, the changes in merchandising practices that reduce the role of price competition and adjustment and elevates that of nonprice competition, including product differentiation;¹ and three, the ever-increasing role of government bodies involved in price setting and commodity marketing.

Typically, only a few participate in the process of determining basic price levels, irrespective of the prevailing competitive structure ... where concentration ratios are high ... price making readily becomes a specialized function, because specialization follows with scale ... Even where competition is atomistic

¹ H. F. Breimyer, "Marketing Aspects of Farm Policy," Agricultural Policy: A Review of Programs and Needs, Vol. V, United States National Advisory Commission on Food and Fibre (Washington, D.C.: U.S. Government Printing Office, 1967), p. 98.

many potential participants tend to be effectively excluded because they do not possess enough market information ... being price followers enables (or forces) them to concentrate on operational assembling, and distributive functions ... In other instances the price making role is delegated.¹

The consequence of imperfect knowledge or even perfect knowledge unequally distributed tends to be unresponsive specialization. Adjustment breaks down because the concentration of market activities segregates the market forces that traditionally coordinate supply and demand. For example, production specialists may function completely oblivious of marketing opportunities existing in the environment, or vice versa.²

Three major changes occurring in the price-making system have retarded the flow and adequacy of market information; they warrant delineation.³ Wholesale markets have declined; direct selling is on the rise. Commodities such as livestock, fresh fruits, and vegetables are typical in this respect. Direct selling complicates information flows because market knowledge is more difficult (and expensive) to collect than it was from central wholesale markets. The second change Breimyer calls "trading on someone else's price." Products are traded without negotiation of an exact price and ultimately paid for on the basis of a published quotation such as government market news report quotations.

¹ G. B. Rogers, "Pricing Systems and Agricultural Marketing Research," Agricultural Economics Research, XXII, No. 1 (January, 1970), 4.

² The current Canadian wheat problem may serve as an illustration. The polarized specialists--the Canadian Wheat Board, on one hand, and the Prairie farmers on the other--revel in their respective abilities, yet only during a crisis does either begin to accept mutual responsibility for suboptimal performance. Ignorance of the facts may be a feeble but perhaps very relevant excuse for a multi-billion dollar failure.

³ H. F. Breimyer, op. cit., p. 98.

There are two serious weaknesses to these practices. First, as the actual negotiation becomes smaller, it can also become unrepresentative, and it can invite manipulation. Second, when only small quantities of uncommitted supplies enter into pricing, a given price level often will persist too long, then over adjust when the delay change takes place. Price movement can be erratic. It is a notably imperfect pricing mechanism.¹

The third and perhaps most pressing departure from traditional price making is vertical integration. There is a general recognition of the need to coordinate production with marketing so that the market better serves the ultimate customer. Breimyer, however, seriously questions the effectiveness, or perhaps the integrity, of vertical integration substituting internal administrative control for the price system as the mechanism by which farm production is kept in line with market demand.

Firms want to incorporate control over their raw material supply as a weapon in the kind of competitive strategy that is becoming ever more prevalent. This strategy relies less than before on price and more on merchandising devices other than, or in addition to, price. The newer strategy is unfamiliar and even disconcerting to farm product marketing, which has long been done in terms of price alone.²

The Consequence of Structural Shifts

In summary, the new structure and the shifts in market power and control have placed some formidable hurdles in the path of market performance evaluation and improvement. In agriculture the size distribution of farms, product homogeneity, exit barriers, and supply elasticities are all conducive to inferior bargaining positions and adjustment

¹ Breimyer explains that close to half of all beef sold at wholesale is priced on the "yellow sheet," while wholesale egg trading is engaged in primarily when the "need" for a price adjustment becomes apparent. Market information may not only be impulsively buffered but allowed to disseminate solely on the whims of participating specialists--private or public. H. F. Breimyer, op. cit., p. 99.

² Ibid., p. 100.

alternatives for producers vis-a-vis processors, wholesalers and marketers. The structural superiority and market power of processors and supply firms "... constitute an aggravating influence to adjustment in prices and incomes in agriculture."¹

Agriculture, however, is not the only industry experiencing adjustment, for economic organizations in general are frequently changing. Some contemporary thoughts on these more global market departures warrant brief consideration.

¹ R. F. Lanzilotti, "Market Power and the Farm Problem," Journal of Farm Economics, XLII, Part 2 (1960), 1244.

CHAPTER III

INDUSTRIAL ORGANIZATION I: MACROECONOMIC CONSIDERATIONS

An Introduction

Modern society is composed of organizations, the study of which has been christened industrial organization. The dynamic character of market institutions sets the tempo of socio-economic activity. Industrial organization encompasses market disposition analysis and public policy. The task is not simple. The systematic exploration of industrial organization involves the blending of microeconomic theory with macroeconomic concepts of markets and industries.¹ Etzioni outlines the crux of the problem in the following manner.

Organizational study has a long way to go before it will do justice to the crucial question of the organization of organizations. The importance of this problem should not be understated. Modern society is composed more and more of larger and larger organizations. Society has long recognized that it cannot leave economic interaction to the free play of the market forces because this might not lead these organizations to pursue a course that will bring the greatest happiness to the greatest number. The same holds for interaction among organizations that do not pursue economic goals, and for noneconomic interactions of economic organizations. Modern society has found it necessary to build more and more instruments to regulate this interaction to encourage an increase not only in the effectiveness and satisfaction within each one but also of the relations among them.²

The Central Inquiry

The central inquiry of industrial organization has as its core two key elements--organizational power and public policy. Organizational

¹ R. R. Hurnanen, D. G. Devine, and M. H. Hawkins, "Industrial Organization and Policy Development in a Dynamic World," Canadian Journal of Agricultural Economics, XVII, No. 2 (July, 1969), 108.

² A. Etzioni, ed., Modern Organizations (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964), p. 112.

power as previously defined, is the scope of significant choice open to a market participant. The critical first question is one of degree. What degree of monopoly or oligopoly power is detrimental to society? What degree of efficiency, progressiveness, competitiveness, and security is society willing to live with? What degree of public intervention successfully safeguards free enterprise? What is the appropriate degree of "mix" that maximizes social welfare in the situation of a guided versus an automatic economy? Second, is the public inquiry centering on implementation? Even if we establish the goals and degrees desired by society, how are they maintained and of utmost importance, how are they kept progressive and responsive to changing degrees of social satisfaction? The dynamic nature of industrialization commands society to establish and reestablish social values and the laws and means to protect them.

The theory of industrial organization is usually delineated into three subsets for examination--structure, conduct, and performance.¹ These well defined subsets often tend to restrict the scope of contemporary thought but they should not. Intimately united with this reigning triad of market parameters are the very relevant socio-economic objectives such as full employment, efficient allocation of resources, price stability, growth, and equitable distribution of income. The specific examination of markets at the microeconomic level should not preclude the macro-implications; the importance of the relationship cannot be denied.

¹ Structure is defined as the organizational characteristics of the market that may influence the nature of competitive environment. Market conduct is defined as the organization's policies toward the moves made by rivals in the market. Performance is defined as a firm's or industry's contribution relative to its potential in promoting social welfare.

... the metamorphosis of economic systems in the course of industrialization, the decisions--not necessarily conscious choices--directly shape an economy and the interrelation among workers, managers and governments ... At any one period, the economic constraints constitute parameters or conditions given to the industrializing elite that is leading the march. They shape the range of choice in economic policy that is available to leaders seeking to push capital formation above the critical¹ level of sustaining growth or beyond to even more rapid expansion.

The Original Emphasis and Reform

Industrial organization originally emphasized market structure. Structure was traditionally the academic "whipping boy" for suboptimal market performance. During the last decade the emphasis has shifted or perhaps adapted to the forces of industrialization. The goals and "degrees" acceptable to society have changed, resulting in the reevaluation of protective social policies.

Joe S. Bain in his book Industrial Organization made one of the first important steps in systematically examining the anatomy of industrialization.² Bain's research centered on structure, and due to its impressive perspective, was used as a format for government investigations and policy development in both the United States and Canada.³ Bain's conclusions about market structure can be summarized as follows: (1) very high concentration appears to lead to poor performance, that is, excess profits, while moderately concentrated industries correspond to

¹ C. Kerr, J. T. Dunlop, F. Barbison, and C. A. Myers, Industrialism and Industrial Man, (Cambridge, Massachusetts: Harvard University Press, 1968), pp. 98-99.

² J. S. Bain, Industrial Organization (New York: John Wiley and Sons, Inc., 1959).

³ Prairie Provinces Cost Study Commission, Report of the Royal Commission on Consumer Problems and Inflation (Regina: Queen's Printer of Saskatchewan, 1968) and United States National Commission on Food Marketing, Organization and Competition in Food Retailing, Technical Study No. 7 (Washington, D.C.: U.S. Government Printing Office, June, 1966).

relatively atomistic industries; (2) high barriers to entry are also adverse, coupled with high concentration, the resulting structure is very unsatisfactory; and (3) extreme product differentiation leads to increased concentration, high barriers to entry, and excessive selling costs.¹

In short, Bain said that a high degree of organization concentration was undesirable--undesirable because the resulting institutions had the power to adversely exploit their immediate environment. Market concentration meant less competition and less competition would never be acceptable because competition was the basis, the "invisible hand," guiding the free enterprise system. Consequently, through the early 1960's American public policy, in theory at least, was directed at breaking up concentrated industries in an effort to increase competition and prevent public exploitation.

Public opinion began to change late in the sixties primarily because society realized that the "ideal" atmosphere of "perfect competition" was perhaps inappropriate.

The problem of economics here, once again, is not one of original error but of obsolescence. The notion of the consumer so distributing his income as to maximize satisfactions that originate with himself and his environment was not inappropriate to an earlier stage of economic development. When goods were less abundant, when they served urgent physical need and their acquisition received close thought and attention, purchases were much less subject to management. And, on the other side, producers in that simpler and less technical world were not under compulsion to plan. Accordingly they did not need to persuade--to manage demand. The model of consumer behavior, devised from these conditions, was not wrong. The error was in taking it over without change into the age of the industrial system. There, not surprisingly, it did not fit.²

¹ J. S. Bain, op. cit., p. 110.

² J. K. Galbraith, The New Industrial State (New York: The New American Library, Inc., 1968), p. 225.

The Demands of Industrial Reform

As a result of the new "awareness," the question became one of choice and responsibility for both organizations and society alike. The powerful, potentially efficient institution could choose to use its strength to increase profits, limit supply, create barriers to entry and so on--but would it? Kaysen explains that the width of choice and the uncertainty of consequences combine to rob the notion of maximum profit of its simplicity, and at the minimum of complexity the organization must be viewed as seeking some combination of anticipated return to safeguard itself against short-run variation. In the absence of competitive constraints a firm may seek a variety of goals: "satisfactory" profits, an "adequate" rate of growth, a "safe" share of the market, "good" labor relations, and so on.¹ Each firm views market conditions in a different perspective--particularly when looking at long-range objectives. Consequently, no specific combination of goals need adequately describe the behavior of organizations with significant market power.

No matter how earnestly management strives to "balance" interests of stockholders, of employees, of customers, of the "general public," as well as the institutional interests of the enterprise--it is ultimately its own conception of these interests and their desirable relations that rules ... when ... the scope of choice is great and the consequences reach widely into the economy and far into the future, the problem of authority and responsibility of the choosers is bound to become pressing ...²

In a similar vein, public competition policy is seriously questioning the validity of relying so heavily on market concentration as the determining criteria for evaluating market performance. A choice

¹ C. Kaysen, op. cit., p. 112.

² Ibid., pp. 207-208.

is being made between efficiency and competition. In a recent report on competition policy, the Economic Council of Canada states:

The function of competition policy is not to bring about a textbook regime of "perfect" competition in all various markets making up the system, but rather to encourage the liberation of the system's maximum competitive potential "imperfect" though this may be ... Competition should not itself be the objective but rather the most important single means by which efficiency is achieved.¹

In summary, the liberation of potential efficiency emerges as the primary objective of industrial organization. In the subsequent in-depth analysis of market conduct and performance industrial organization must explicitly define terms such as price efficiency and product differentiation, intimately differentiate or contrast market power with market efficiency, and specifically develop effective criteria for socio-economic and political performance evaluation. Social responsibility, whether moral or mandatory, may emerge as the nucleus of ethical conduct and acceptable performance.

¹ Economic Council of Canada, Interim Report on Competition Policy (Ottawa: Queen's Printer, 1969), pp. 8, 9.

CHAPTER IV

INDUSTRIAL ORGANIZATION II: MICROECONOMIC CONSIDERATIONS

Market Efficiency - The Workable But Improvable Trade-Off

Any consideration of market efficiency must begin with the distinction between the two completely different functions of the market. A marketing system serves two purposes: (1) through assembling, processing, transporting, storing, and distributing, it adds form, time, and place utilities to commodities in moving them from producers to consumers; and (2) through various exchange mechanisms, it allocates these commodities among buyers, and the returns among sellers, and consequently expresses consumer preferences. The aggregate efficiency of the system relies on the intimate relationship between the two market functions--the operational component on one hand and the pricing element on the other.¹

Pricing efficiency means producing the right amounts of the appropriate goods, at optimal cost, through correct resource allocation and rapid product distribution--adequate, honest, and equally distributed information implied. Stigler states, however, that full

¹ The correlation between exchange efficiency and operational efficiency can theoretically be either positive, negative, or zero. If the correlation is positive either variable can be improved with a corresponding improvement in the remaining variable. A negative correlation means a positive change in one variable will result in a negative reaction in the other. If there is no relationship between the two variables the correlation is zero and an improvement in one variable will not influence the other at all.

knowledge, by itself sufficient for efficient pricing, is not realistically attainable in the absence of standardized goods.¹

In bringing buyers and sellers together to exchange goods and money, a market is efficient if purchases can be made at the lowest price offered by a supplier and sales can be made at the highest price any buyer is paying ... Thus under competitive conditions (which are imperfect in varying degrees), efficiency may be acceptable if the pricing system produces values within some reasonable range. Within this range, various factors such as bargaining power and knowledge, influence the exact level determined ... From the standpoint of efficiency, it may appear desirable for a limited number of participants to develop a high degree of expertise and determine basic values which are then widely used by others in the industry. But specialization of this function should not be carried to the extent that it widens the opportunities for individual gain through price manipulation ...²

Rogers carries the relationship of information and efficiency a step further by describing a suboptimal trade-off.

A pricing system which is currently operable or technically feasible neither implies or requires perfect knowledge on the part of all active participants. If knowledge is imperfect there may not be a perfect set of "short-run" equilibrium prices but there may be alternative sets of possible values which would "clear the market" in linked time periods. The operative pricing system may do the best it can with incomplete knowledge and subjective judgement, limited participation in price determination, and the time available to arrive at some basis of trading in order to get on with the job of physically moving the product to retailers, consumers, institutional users, exporters, etc. The end result can be prices which are usable, but improvable.³

The Power Potentials - Efficiency and X-Efficiency

The scope of significant choice available to market participants has a governing influence on the "usability" of market prices. The possible

¹ G. S. Stigler, The Theory of Price (New York: The Macmillan Co., 1952), pp. 53-55.

² G. B. Rogers, op. cit., p. 6.

³ Ibid.

adverse effects of increased market power may be offset by the beneficial effects of increased market efficiencies. Efficiencies should be emphasized because a double-barreled effect is implied. Market power is often accompanied by "allocative" efficiency or economies of scale and specialized labor plus "X-efficiency."¹ Consequently, market efficiency can be evaluated in terms of optimal scale for an industry--firms that are too large or too small may be inefficient; and the market can also be judged in terms of X-efficiency, that is, in terms of cost minimization under a given scale and state of technological parameters.

Price Flexibility vs. Price Efficiency

The relationship between price flexibility and price efficiency is not necessarily a complementary one--the correlation depends on the market.

First, while highly competitive markets (such as some stock and commodity exchanges) do show more price flexibility than other markets, this is not the same as concluding that price flexibility varies inversely with the distance of a real market from a purely competitive one. Second, as far as this greater price flexibility in purely competitive markets goes, much or all of it may be excessive--that is, more than is necessary to carry out the resource allocation functions of price flexibility. What is the point of having prices change more rapidly than resources can adjust to changes? And third, much of the debate over the prevalence of price inflexibility in modern markets is made irrelevant by the problem of price measurement.²

¹ The term X-efficiency refers to those cost savings which arise from management's ability to lessen cost discrepancies from economies derived from moving from one ideal "outerbound production possibility" surface to another, more efficient one. X-efficiency is thus concerned with doing better (being more efficient) within a firm and within the bounds of present possibilities, i.e., production techniques, worker motivation, and all sources of productivity increases not easily categorized. R. E. Low, Modern Economic Organization (Homewood, Illinois: Richard D. Irwin, Inc., 1970), p. 149.

² Ibid., pp. 295-232.

Where is the optimal trade-off? Where are prices flexible enough to efficiently ensure appropriate market adjustment of supply and demand yet not so flexible as to be redundant? The empirical measurement of price efficiency necessarily precludes any evaluation of price flexibility.

Performance Criteria In Industrial Organization

Richard Low delineates two separate approaches in the establishment of performance criteria.¹ The traditional approach follows criteria based on the degree to which markets contribute to an ideal allocation of resources.² In the second approach markets are rated according to how well they approximate certain desirable criteria

... which are not necessarily relevant to, and may be directly contrary to, resource allocation goals. Is there sufficient product variation? Is there sufficient market growth? Is there sufficient innovation? ... Although often based on the same simplistic identification of changes in economic welfare and changes in national product that lies behind resource allocation theory, the emphasis shifts from increasing the national product derived from given resources and techniques to increasing the national product through more resources and better techniques.³

Low continues by suggesting that we denote resource allocation as *the* standard, to one of several criteria for judging market success.

¹ Two statistical measurable quantities--price and profit--are the key criteria in examining resource allocation.

² Such a "correct" allocation of resources is assumed to maximize the total utility of individuals in the economy. R. E. Low, op. cit., p. 295.

³ Ibid., p. 300.

Criteria for Price Efficiency Evaluation

The measurement of price efficiency can be related to various market tests. One broad yet workable set of criteria are adequately outlined by R. S. Vaile as follows:¹

- (1) The ease of making contact among prospective buyers and sellers.
- (2) The completeness of information concerning conditions of supply and demand and the promptness with which changes in these conditions are reported.
- (3) The adequacy of opportunity for "shopping" among different offerings in the formation of market judgments.
- (4) The existence and usability of credit and similar facilitating instruments, one purpose of which is to provide a reasonable degree of equality in purchasing power as between buyers and sellers.
- (5) The accuracy with which prices reflect supply and demand conditions and thereby direct the use of resources not only in the physical aspects of marketing, but in other lines of production as well.
- (6) The extent to which the market organization permits manufacturing and similar production activities to be so carried out as to take advantage of the economies of large-scale production, but at the same time serves to prevent the effects of monopoly such as the restriction of output that results in a monopoly profit to sellers.
- (7) The extent to which the market organization encourages the development of vertical integration and thereby avoids unnecessary changes in ownership.

¹ R. S. Vaile, "Efficiency Within the Marketing Structure," The Environment of Marketing Behavior, ed. by R. I. Holloway and R. S. Hancock (New York: John Wiley & Sons, Inc., 1969), p. 429.

(8) The economic effects of attempts to shift demand schedules for specific commodities--the effects, that is, upon individual sellers and individual buyers and business in general.

(9) The extent or degree to which the market distributes income payments proportionally to the marginal product.

The above list is by no means exhaustive in its attempt to test efficiency, for inefficiencies may be both the cause and consequence of yet another variable--market intelligence--measured by the degree of price dispersion. Stigler states that price dispersion is a manifestation and indeed a measure of ignorance in the market.¹ The degree of heterogeneity among commodities may bias such a measure but where commodities are standardized, as is often the case in the food and agricultural industry, price dispersion may be the direct result of inadequate information.²

Advertising and Product Variation

Advertising, product variation, innovation, and excess capacity are the most widely used performance standards applicable to individual market analysis. All may be of equal importance as criteria but advertising and product variation are of major importance in the assessment of market information and pricing efficiency.

¹ G. J. Stigler, op. cit., p. 214.

² The consequence of market ignorance and inefficient price dispersion is price control. Where the promulgator of announced prices is forced to guess about his own demand and that of relative competitors, predetermined output is often wrong. Accordingly, if participants cannot understand, predict, or react efficiently to changing market conditions--they try to control them. But price control measures, which attempt to determine supply and demand, preclude efficient allocation of resources. The situation is analogous to the tail wagging the dog instead of vice versa.

Unfortunately there are few, if any, adequate guidelines for evaluating the level of advertising. "Informational" advertising may be accepted where "manipulative" advertising would not--but at what level does redundancy or waste occur? The optimal level of advertising will often fluctuate depending on social objectives.

Since advertising may increase the market power of existing firms, it can be an obstacle to factor mobility and efficient allocation of resources, although more so under the contradictory assumption of unchanging tastes than taking such changes in consumer taste caused by advertising into account. And from a macro viewpoint it can be argued that a far higher level of advertising is necessary, including, and indeed, blessing; manipulative--to maintain consumer demand. Under inflationary conditions, however, a value judgement emphasizing the importance of price stability might lead to the conclusion that any advertising--even informational--is too much.¹

Advertising may also include or encompass such activities as announcing major policy changes. The advertised strategy may be both informational and manipulative--informational because customers and competitors are made aware of the new market conditions; manipulative to the degree the promulgator of the announcement has employed superior market knowledge to predict environmental reactions, thus adjusting, in advance, to expected market reactions.²

Product variation similarly falls into the arena of subjective evaluation. Variations can be excessive to the point they retard the efficient allocation of resources yet be deficient in providing sufficient choice for diverse demands.

¹ R. E. Low, op. cit., p. 307.

² Empirical evidence will substantiate this informational-manipulative thesis in Chapter VI by emphasizing the potential power an informed participant has over the environment which must react in the absence of comparatively equal market knowledge.

Excess variations have sometimes been found in retailing as an adjunct of easy entry and the frequent emphasis on "non-price" competition. Customers have a far wider choice of various price, service, quality, and courtesy combinations than exist in other markets. Such is the ideal picture.¹

But is it ideal? Granted, more choice is preferred to less, but if a customer, in "any" market, is so burdened with alternatives that rational comparison is physically impossible, the element of variation becomes more an "imposition" than a "desirable." With a flair of professional wit, E. B. Weiss crystalizes the problem as follows.

To the more sophisticate public of today, the consumer is king concept is pure poppycock!

The fact is that technology is spawning such a torrent of new and improved products--and marketing spawns such complicated packages and deals--and advertising is so uninformative and so riddled with half truths--that it is difficult even for the trade, as well as consumers, to keep reasonably well posted.

The consumer cannot be chemist, mechanic, electrician, nutritionist. Nor can he be a lawyer trained to read the small type in warranties. Nor an expert on product hazards.

The market makes a walking computer necessary by offering fractionated-ounce packages, trading stamps, the subtleties of cents-off deals, and other complications.

Actually, the shopper is expected to choose wisely under circumstances that baffle professional buyers.

Most of us are simply too busy, or too tired, or too harassed to take a computer, a slide rule, and an M.I.T. graduate to market.

Just as a rational voting procedure is necessary to a free political system, so a rational shopping system is necessary to a free market.²

Differentiation - The Critical Path

Product differentiation, a hybrid form of product variation, is measured by the cross-elasticity of demand and supply which exists among competing commodities.

¹ R. E. Low, op. cit., p. 309.

² E. B. Weiss, "The Corporate Deaf Ear," Vital Speeches of the Day (January 15, 1969), p. 206. Quoted in The Journal of Marketing, XXXIV, No. 2 (April, 1970), 32.

... product differentiation, so defined, is identified with the degree of consumer preference among highly similar (almost identical) brands produced by different companies. It is thus logically enough inversely correlated with the "knowledgeability" of buyers and positively correlated with "excessive" (presumably manipulative) advertising ...¹

Differentiation of products, prices, qualities, services, and so on, encompasses the entire realm of market conduct from price to non-pricing activities. Affluence has changed the nature of strategic alternatives; choices are still made, but they now center on where, how, when, and to what extent differentiation will occur, regardless of the commodity or the resource. Unfortunately traditional efforts to restore "free enterprise" are retarding contemporary research from grasping the relevant problems of market conduct and performance.

It obstructs the development of a satisfactory theoretical approach to what is in the author's view the present greatest gap in industrial organization--a useful theory of product differentiation.²

A useful theory of differentiation, per se, is even more in demand, and the one economic resource that facilitates all differentiation is also the ultimate in "differentiables"--information itself.

No satisfactory theory of information exists for the purposes of examining performance or conduct within a market. Unfortunately without a theory of information it is not possible to determine whether producers and consumers are really in a position to evaluate their own information needs and current market information deficiencies. Deficiencies of market information may be much more serious than indicated by producers and consumers ... there is currently no way of determining the consequences of market conduct, of improved information services. Such consequences might be most dramatic; and it may be further argued that conduct considered socially undesirable could be virtually eliminated by a system of perfected or even improved market information.³

¹ R. E. Low, op. cit., p. 474.

² Ibid., p. 455.

³ G. R. Winter, Conduct in Canadian Food Marketing (Ottawa: Agricultural Economics Research Council of Canada, July, 1969), p. 171.

Prices, policies, qualities, strategies, and advertisements all derive their functional characteristics through information dissemination and differentiation. A useful theory of information and its derivatives may provide the social insight required to stimulate ethical conduct and responsible performance.

Pugh, et. al, aptly encompasses the critical socio-economic and political issues as follows:

The heart of ethical conduct is action in the general interest. The problem is to make sure that organizations acting in such a way survive, and that those not meeting the needs and ends of society disappear. But this must be done without the use of coercion ... Action in the general interest is an ideal which is difficult to attain, and the need is for a mechanism which will continually adjust actual to ideal ... the need is for a governed market economy with the principle of political representation built into it which makes an individual responsible to others for his actions. There has been a shift from the market to representation as the adjustive mechanism. It is through the operation of social democracy that the best approximation of the ideal and actual can be made.¹

To summarize the quotation, there is a basic need for a non-coercive adjustment mechanism to continually enhance the operational characteristics of social democracy. The question is how well an improved information system meets the requirements of that mechanism.

¹ D. S. Pugh, D. J. Hickson, and C. R. Hinings, Writers on Organizations (London: Lyon, Grant, and Green, 1964), p. 92.

CHAPTER V

THE EMPIRICAL SETTING - A CASE HISTORY

The Rational Market

Two empirical studies were conducted on the retail food market in metropolitan Edmonton during the period 1967 to 1969.¹ Basically the market was studied to determine the nature of price behavior as a signal of market information and as a tool of competitive strategy. As a result of the research a considerable amount of market information was accumulated including a data bank of more than 100,000 actual and advertised prices. The accumulated knowledge about price behavior, advertising strategy, promotion, product and consumer differentiation, and general competitive rivalry set the stage for the experimental research. The following paragraphs will briefly describe a case history of the empirical setting as it occurred up to June 1, 1970.

The Pilot Study

The initial research by Hawkins, Warrack, and Pattison involved 72 food items and 23 Edmonton supermarkets. Prices were collected and analyzed for the 11-week period, February 2, 1968, to April 12, 1968.

Noticeable price differences were recorded between firms, regions of the city, and between individual stores of a major chain.

¹ M. H. Hawkins, A. A. Warrack, and W. S. Pattison, "Intracity Retail Food Price Behavior," Canadian Journal of Agricultural Economics, XVI, No. 2 (1968), 131-142, and D. G. Devine and M. H. Hawkins, "An Empirical Study of Metropolitan Market Conduct in Food Retailing," Canadian Journal of Agricultural Economics. (Publication pending).

The lowest food prices were detected in the eastern regions of the city. It was hypothesized that the introduction of a discount operation in the eastern region contributed to the more competitive price level. Price differences did not readily reflect merchandising cost differences, particularly differences between stores of the same firm. Price variations were statistically independent of price levels; as a result, the argument that price variation is the consequence of price competition was rejected--high variations were not accompanied by lower price levels.

On March 4, 1968, the Edmonton Journal carried a press release on the Report of the Royal Commission on Consumer Problems and Inflation; the impact on the market was substantial. Both price levels and price volatility declined and regional differences diminished (Figure 1). Food prices in the eastern region changed marginally but dropped noticeably in other areas of the city.

As a result of the unique market reaction to the Batten Report, it was hypothesized that food retailers made use of consumer ignorance and immobility in formulating price strategy and were, in fact, very aware of income, educational, and mobility characteristics of the clientele in separate market situations.

Hawkins, Warrack, and Pattison concluded that the use of the traditional concentration index as a primary measurement of competitive behavior, under circumstances where price levels were not uniform and price variations were not similar, was an extrapolation of an economic criteria beyond its descriptive capabilities. A general need was recognized, namely for contemporary guidelines to evaluate modern pricing policies in a concentrated market environment.

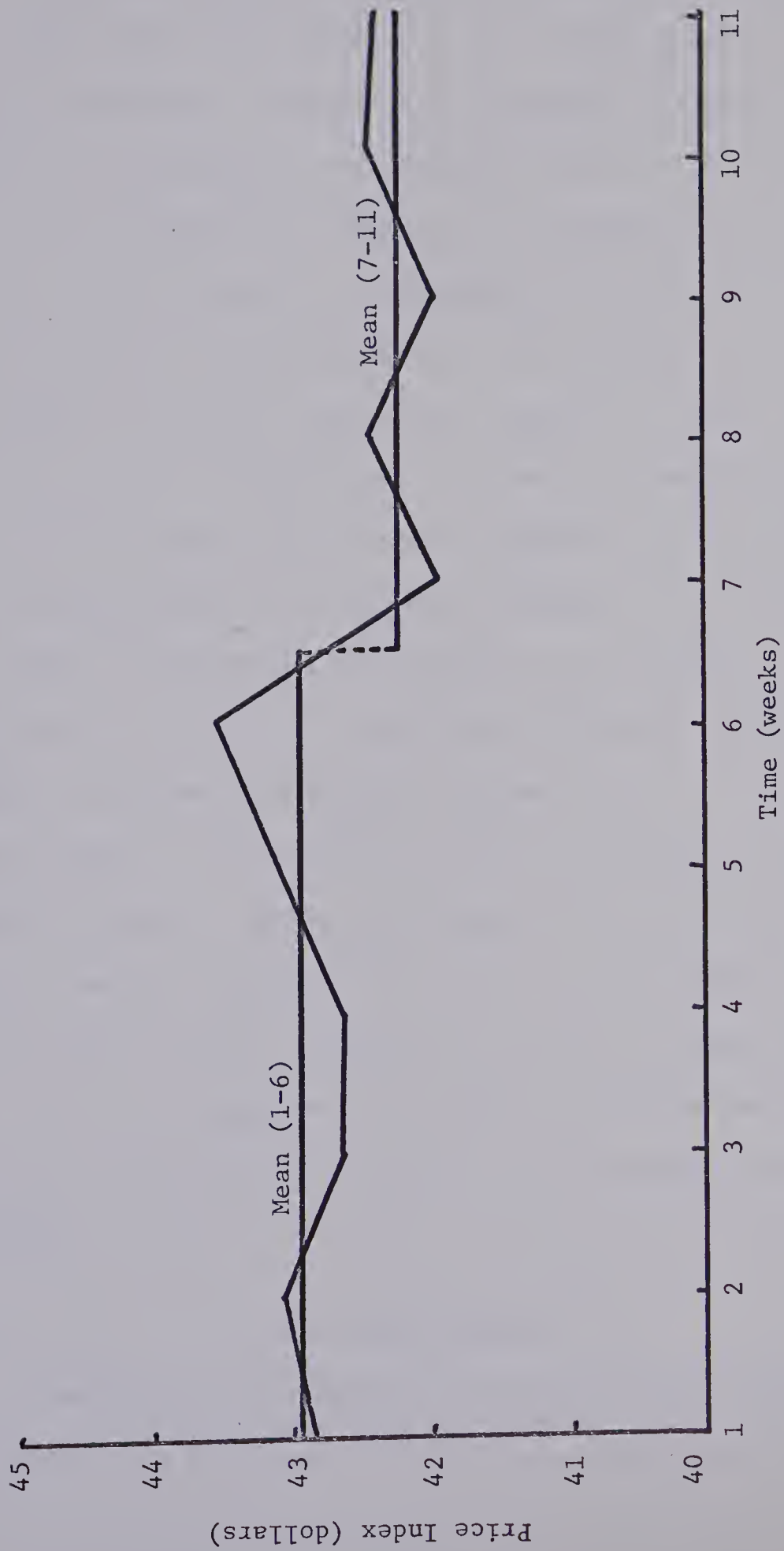


Figure 1

TOTAL RAW PRICE INDEX, ALL STORES, OVER 11 WEEKS

The second study, initiated by Devine and Hawkins, began in January, 1969. The pilot project, in its revealing nature, recommended that several additional techniques and procedures be used in future analysis. These recommendations were closely adhered to in the subsequent research and included the following: (1) a weighted price index--raw price data was converted into a weighted price index based on consumer expenditure patterns (Appendix A); (2) the inclusion of weekly newspaper advertisements--advertised prices were compared to actual store prices; (3) a socio-economic delineation of the market clientele--the city was divided into two broad socio-economic categories, underprivileged and affluent (Appendix A); (4) a frequency analysis of price discrepancies--prices within one chain were hypothesized to be identical in all stores during similar time periods; significant differences would be recorded indicating the degree of discrepancy (Appendix A); (5) a price efficiency evaluation based on five criteria of price efficiency was examined to determine the level of market performance; (6) both Chi-square and regression analysis employed to determine the relationship between price level and price variation (Appendix A); and (7) a larger number of food items priced for a longer period of time--77 products were priced for approximately six months in both chain and independent operations (Appendix A).

Market Observations

Results of the analysis again indicated that Edmonton was characterized by a wide range of prices among geographical regions,



within firms, between chains, among products, and also between socio-economic regions and different time periods. The more affluent areas, the east and west, had lower food prices. The underprivileged sector of the market in the north and south paid more for food during the entire observation period (Figure 2).

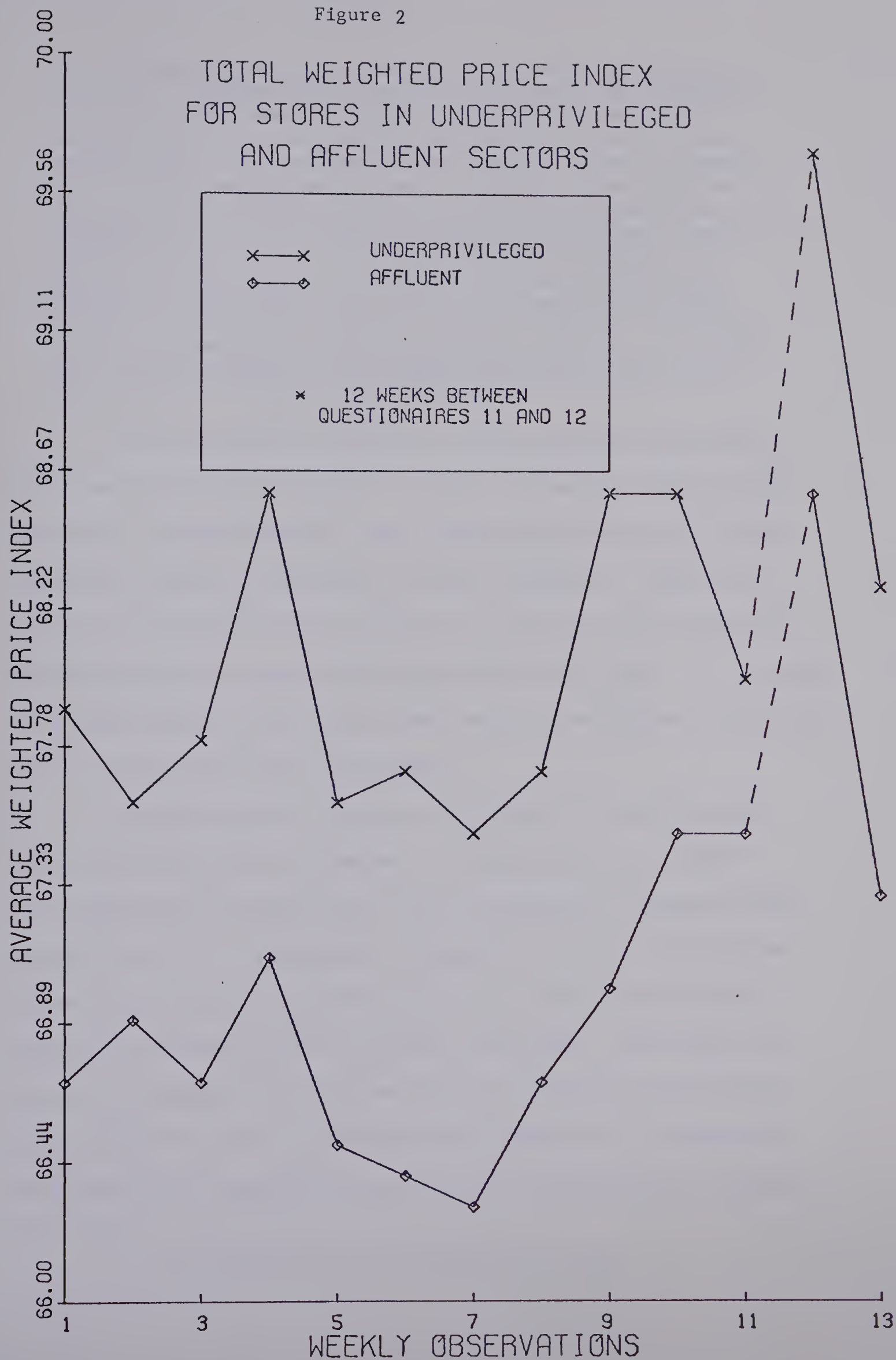
The discount operations, whether independent or chain affiliated, had the lowest aggregate price level. This, however, was followed closely by the largest chain in the market.¹ Stores in the major chain consistently ranked less expensive than competing chains. For example, in an underprivileged area prices were all relatively high, but the major chain would be the most competitive, and, similarly, in the more competitive, affluent areas, the aggregate price level was lower, but the major chain was always the least expensive. Chains generally used different pricing strategies for different areas of the city depending on social, economic, cultural, and educational factors. The poor, the uneducated, the old, the laborer, and the foreign born clientele seemingly reflected a more inelastic demand than the affluent sector of the market and consequently endured higher food costs.

Price changes by most retail outlets reflected both the weekend special and the month-end wage payment concept.

Individual chains usually advertised price specials on either Wednesday, Thursday, or Friday, corresponding to weekend shopping habits. The number of advertisements and the number of price changes increased dramatically towards the end of the month and in some cases quadrupled. Generally the total food index remained constant or rose during the same period. In the largest chain particularly the average weighted price index of all stores invariably was higher at the end of each month

¹ Independent discount operations entered the market during the latter part of 1968.

Figure 2



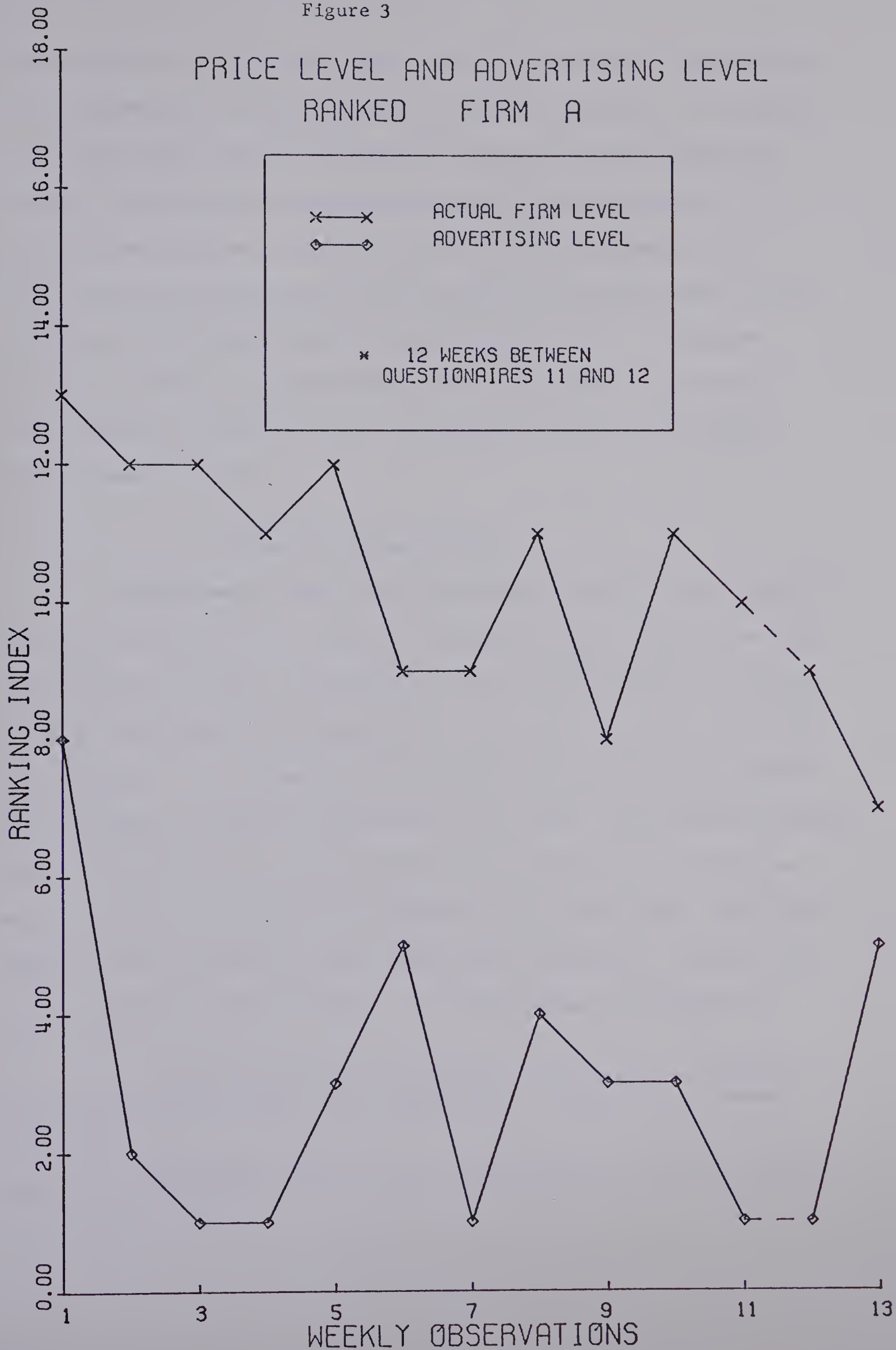
corresponding to the increased number of advertised specials, Either the advertised price specials were offset by increased prices in other items or, in fact, specials were not price specials but were advertisements representing normal or above normal prices. Food prices in Firm A stores failed to correspond to advertised prices carried in the local paper [Figure 3]. The specials were either not marked on shelves or marked so inadequately that price takers failed to record them. Thus the consumer met with a similar problem and would not obtain the advertised price unless it was recorded by the cashier. In either case the consumer was left in a vulnerable bargaining position. Such pricing tactics reduce the consumer's ability to make rational food purchasing decisions unless he is equipped with a wide knowledge of advertised food specials and actual food prices in a large number of stores.¹

Price efficiency evaluation revealed numerous limitations. Specifically the more competitive regions--for example where discount stores were located--reflected lower prices, indicating that increased competition fostered improvements in price efficiency. Market entry met with considerable problems because low price strategy employed by new participants was immediately imitated by nearby chains. Large-scale advertising similarly restricted market entry as the largest advertisers were not the lowest priced supermarkets.

Information was inadequate, misleading, not uniform, and unequally distributed in the market. A relatively minute number of advertised specials transmit very little knowledge to consumers about aggregate prices in a supermarket. Regardless of who is responsible for providing adequate information--public or private institutions--inadequate knowledge promotes irrational decisions. Compounding the problem of inadequate knowledge was false and misleading advertising. City-wide advertisements were not rigidly adhered to by supermarkets. The frequency of dispersing advertised prices was rationally staggered

¹ D. G. Devine and M. H. Hawkins, op. cit.

Figure 3



by the retailers. Food bargains were available during the interim between end-of-the-month pay cheques yet generally never advertised. In contrast a relatively large amount of advertised information was distributed at the end of the month when the aggregate price level was highest. The Chi-square and regression analysis indicated that the weighted price index variation was independent of the weighted price index level, while a definite relationship (positive) existed between the two variables for stores in Firm A. In other words, when the number of advertised price changes increased in Firm A, the aggregate price level in that firm increased as well.

Contingent Recommendations

Recommendations about policy development and performance improvement followed directly from empirical findings. Market observations indicated that the necessary conditions for price discrimination were evident and thus were possibly being employed to the extent that price efficiency was suboptimal.¹ The situation in the market appeared to be favorable for a price leader to initiate discriminatory practices. The market was segmentable as verified by the socio-economic price discrepancies. There was small chance of competing firms underselling the price leader. Firm A was always the most competitive chain regardless of location.² Finally, the cost of segmenting the market did not readily appear to outweigh the

¹ Price discrimination is defined as the sale of a commodity at two or more price levels not correspondent to proportional changes in marginal cost.

² Competitors could, in fact, enjoy the price umbrella effect stimulated by Firm A.

revenues derived from the price discrimination. In short, the metropolitan price level would seem to rise and fall at the discretion of a major chain. As a direct result of the above condition the following public policy was recommended for consideration. All stores within one firm should sell homogeneous products at one price during identical time periods in a metropolitan market, subject to reasonable cost differences. The consequences of such a policy were predicted to be (1) a lower aggregate price level--efforts to increase or maintain market share through price reductions would have to be city-wide; (2) increased price competition as neighborhood independent outlets realized local chain price changes were set by metropolitan parameters; (3) reduced barriers to market entry for similar reasons; and (4) equal bargaining power in purchasing food items for all segments of the market population--affluent and underprivileged. In essence it was predicted that both price efficiency and competitive performance would increase without the mutilation of existing structures. The scope of significant choice open to the large corporate chains would be reduced while that of the smaller independent supermarkets would be improved.

Other recommendations included the rigid enforcement of advertising regulations, the removal of antitrust laws of market conduct from the criminal code, and the implementation of consumer education and social improvement programs informing the customer and the market how to buy, what to buy, where to buy, when to buy, and related comparisons. In summary, the market needed improved information collection, analysis, and dissemination to increase the bargaining power of consumers and the less powerful competitors.

1970 - The Reactionary Market

The retail study completed in 1969 revealed that "ethical conduct" was suffering. The environment, however, was generally unaware of the research findings; the information was limited to the University of Alberta and the Federal Government.¹ As a result, the environment remained basically placid concerning local market conduct and competitive strategies.²

On January 10, 1970, Firm A announced a major policy change initiating what was to be a very dynamic chain of events. The firm announced it would close all its outlets for three days, Monday, January 12, 1970, to Wednesday, January 14, 1970, and re-open them charging identical prices for homogeneous products in all stores throughout the city.

There are three important implications surrounding Firm A's change in market strategy. First, the firm is highly vertically integrated, it has the latest technology in food handling and distribution, it employs highly skilled management, and being an international firm, it is very large. The firm's management structure is well delineated into four basic levels--neighborhood, metropolitan, regional, and national. A city-wide intercom system intimately connects all outlets with metropolitan management. In short, the organization may well fit Galbraith's definition of a well-planned "technostructure." Despite

¹ The information contained in the study was released to the press late in 1969 during a seminar. It was not published until the following year.

² One could venture a hypothesis that the supermarkets and Firm A particularly were not anxious to see their past conduct activities widely publicized.

all its potential power to ward off market conflicts, probably more readily than any of its competitors, it was the first organization to seriously evaluate and subsequently change the state of its public image. This step indicates that the well-planned organization that is internally structured to facilitate a high degree of management communication is more conscious of long-run environmental conditions and, therefore, more responsive to potential environmental changes involving social knowledge and customer attitudes. Second, the firm very effectively used the dissemination of market information to its greatest benefit. It widely publicized the new pricing strategy informing consumers and competitors through radio, press, and television that now everyone could get the same "everyday low prices" regardless of the outlet within the firm a consumer frequented. Before the public became aware of any adverse market activities the firm boosted its public image by implementing a program implying equal bargaining for all. Third, the placid environment was on the verge of an awakening, thus the first firm to use this potential interest would reap the most benefit through increased volume. By 6:00 p.m., Thursday, January 15, 1970, Firm A stores were full.

In essence the behavior of Firm A was (1) the cause of environmental changes and (2) the consequence of past activities, both of which indicate that management was not only aware of socio-economic interests but respected the potential power of a knowledgeable environment. Volume means profits.

Competitors reacted quickly to the new information. By January 20, 1970, Firm B had announced, again through radio, press, and television,

that all affiliated outlets would be converted to discount operations.¹ The firm advertised relatively low prices, justifying them by reduced costs.² Firm B also experienced a large increase in sales due to the new discount strategy. Consumers were either becoming more price conscious or were vulnerable to well publicized changes in market strategy.

Firm C responded in a different way. On January 26, 1970, the Edmonton Journal carried the following headline:

DOMINION STORES TO CLOSE IN EDMONTON AND CALGARY
Dominion is the second major food chain which has moved into Edmonton from Eastern Canada, then been forced to withdraw in the face of stiff competition ...³

Three days later, on January 29, 1970, the Government of Canada made known its reaction in the following press release.

PRAIRIE GROCERY INDUSTRY PROBED
The Federal Government's Combines Investigation Branch is examining the retail grocery industry on the Prairies. This was revealed by Consumer and Corporate Affairs Minister Ron Basford in the House of Commons Wednesday after he was questioned about the withdrawal of Dominion Stores from the Edmonton and Calgary markets ... Some of Dominion's outlets are being taken over by Safeway, the major retail grocery company on the Prairies ...⁴

¹ Firm B had previously opened two pilot discount stores late in 1969 with limited promotion and limited success.

² Individual food items were no longer priced by the stores but by the consumer and food items were packed and removed from the stores by the consumer as well.

³ The Edmonton Journal, January 26, 1970. The A & P chain folded operations late in the 1960's.

⁴ The Edmonton Journal, January 29, 1970.

The Need for Current Information

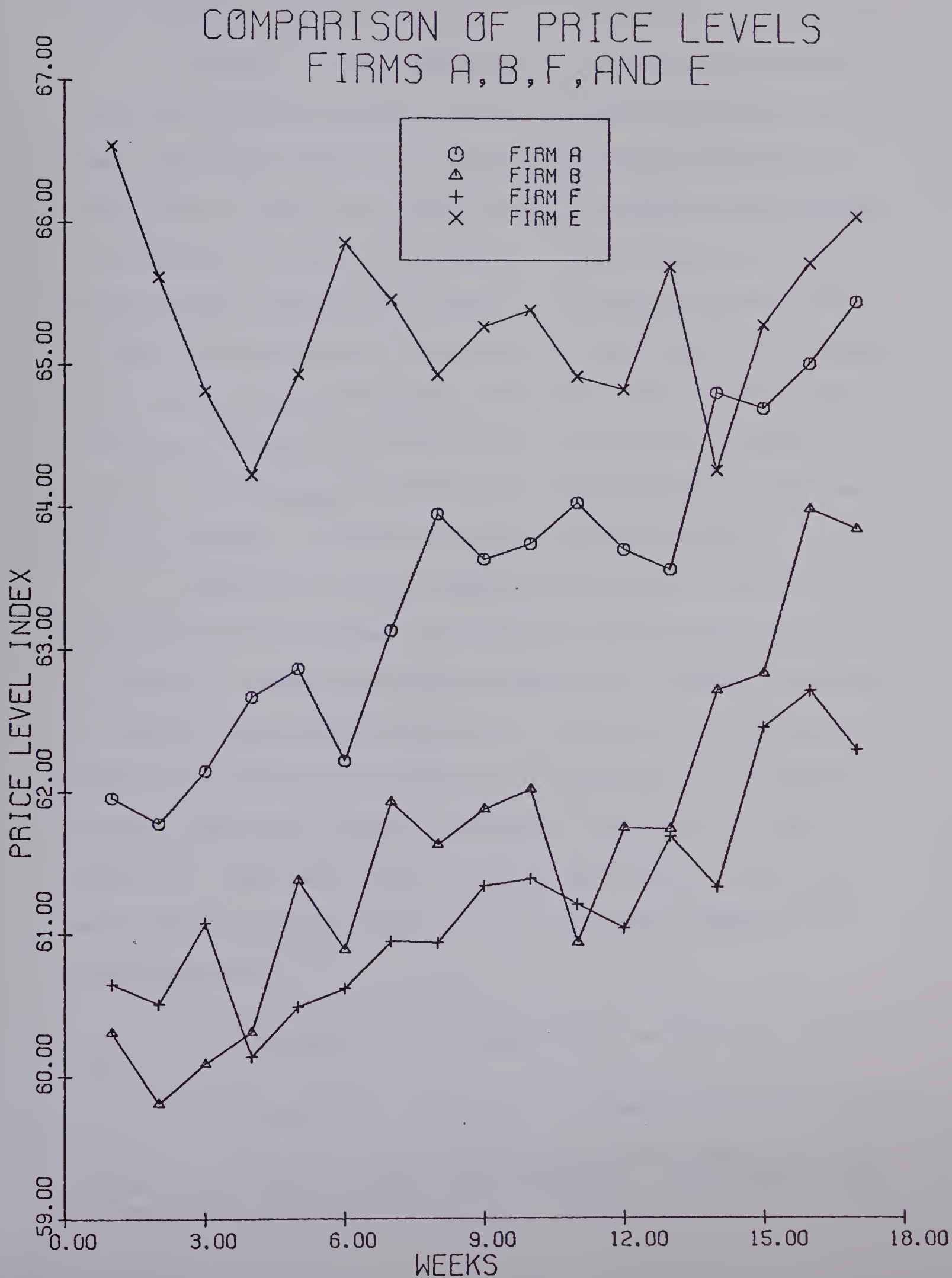
On February 1, 1970, the University began monitoring retail food prices for the third consecutive year.¹ Two firms had experienced volume increases, one firm had been forced out of the market, and market prices in general were changing very rapidly. In short, it was very difficult to appreciate the extent of price level shifts without detailed analysis.

The initial week's price analysis indicated the market had changed substantially. The predictions made in the previous research were basically valid. Various competitors were now able to underprice Firm A (Figure 4). The range of price level differences in Firm A had diminished, and instead of most other major participants ranging above that level, many were now more competitive.

The trend continued during the month of February. The public, however, was still unaware of the specific market changes. As a result of numerous speaking engagements in the city and considerable initiative on the part of the Information Division, Alberta Department of Agriculture, the author made several radio broadcasts the first week in March. Very briefly the public was informed in broad terms that the underprivileged had been paying more, the end of the month was not the most appropriate time to shop, and very recently the market had experienced a change with new firms now establishing the most competitive price levels. Various consumers phoned for information specifically asking where and

¹ For the list of foods contained in the questionnaire and the names and addresses of retailers surveyed in 1970 see Appendix B. Prices were collected by University students.

Figure 4



when to shop, and all offered to fill in price questionnaires or donate nominal amounts of money for current retail information.

On March 17, 1970, the University was represented on C.B.C. television to discuss consumer problems and current inflationary pressures. The retail food market situation was briefly outlined and a public offer was made to the effect that the University would forward to any consumer, retailer, wholesaler, or producer specific, well defined market information on request.¹ The response was excellent. The market wanted additional information on food prices, price changes, store policies, future predictions, wholesale prices, live beef and pork prices, and where to buy such items as gas and baby clothes. Within the following week the University received numerous telephone calls and messages and over 150 individual requests by mail.

Publication of price comparisons presented a problem. The *actual* names and addresses of competing retailers would have to be published to adequately inform the market about current conditions. If, however, the information was false or incorrect, the publisher would be liable and could be charged with defamation.² Consequently, the legal implication received considerable deliberation by the University. After three weeks of careful consideration, the analysis was finally published on April 9, 1970, by a private company, M.I.S. Consulting Limited.³

¹ See Appendix B for a sample of the information in published form.

² See Appendix C for a summary of specific legal implications.

³ Market Information Services Consulting Limited was incorporated by the author to publish the information. See Appendix C for the Memorandum of Association.

By April 14, 1970, consumers were sending in numerous completed price questionnaires and were receiving analytical comparisons of all outlets in the survey. The new information began to disturb various retailers. On April 15, 1970, a store manager from a major supermarket, personally inquired about the new information. He specifically wanted to know what was being done, how it was being done, how to get on the mailing list, how many consumers were already receiving the price data, why his store ranked "unreasonably high," and when the services would terminate. Consumers were using the published information as a format when shopping and were bringing price discrepancies to the manager's attention.¹

During the latter part of April, 1970, the author made several additional speaking engagements to various organizations in and around the city of Edmonton. Subsequent to a meeting with the Alberta Institute of Agrology in Red Deer on April 28, 1970, price information was received from that city. Supermarkets were now sporadically being compared within a 75-mile radius of Edmonton. On May 4, 1970, the following article appeared in the Edmonton Journal.

PRICES CHARTED TO AID SHOPPERS

Can the consumer, armed with better information on food prices, make wiser food purchases?

What effect will improved information have on price levels and the market?

These are questions that Grant Devine, 25, a University of Alberta graduate student, is trying to answer.

Collecting data for his master's degree in business administration, Mr. Devine has been conducting a weekly food price survey in city stores since February.

Prices are obtained on a basic food basket of 60 products, which include all types of foods--meat, vegetables, dairy products--"to represent what people would buy for a week on a limited scale," he explains.

¹ By April 22, 1970, the price level in that particular store had diminished significantly. See Figure 4. Firm E reduced prices between weeks 13 and 14.

30 Stores

Both national and private brands are priced, but the focus is on price comparison between stores rather than between products.

We try to maintain about 30 stores, but the number varies from 25 to 40, depending on how many price takers are working." The stores--supermarkets, chains and independents--are located in all areas of the city.

Mr. Devine accumulated 2,000 to 2,500 prices a week from about 15 price takers (university students) and now has some 70,000 prices. He uses the university computer to tabulate his results.

"Basically we want to give people price information; we'd like to keep the general public informed of the aggregate of changing price levels."

Record Data

By reporting this information, he can record what effect increased, improved information can have on the market.

Upon request, Mr. Devine can give the consumer each week the price level index (the cost of the food basket from cheapest to most expensive) in all stores surveyed, and each store's ranking in the previous three weeks.

He can also give the average, high and low cost of each product they've priced.

Anyone who wants their local supermarket compared may write to Mr. Devine. He sends them a price sheet to be filled out and returned and their store's price level index is then compared to his figures for the rest of the city, and its rank on the index reported to the consumer.

No Charge

Mr. Devine says this comparison may be requested as often as desired. There is no charge other than for a stamped, return envelope. Mr. Devine can be contacted through the department of business administration, U of A.

He said he has already received many letters--some of them about supermarkets from out of town. "It has a big implication for rural people," he said. "If they come into town once or twice a month and shop where I tell them to, they can save maybe eight to 14 percent."

Predicting some possible effects of improved information, he said, "hopefully it would keep stores very competitive. I don't think it would create a monopoly because people don't just shop for lower prices, but because a certain store is handier than another, or because they like the manager ..."

He pointed out that such a survey could be done with any product, that can be standardized and compared, such as gasoline or certain articles of clothing.

His survey will probably end this summer when he finishes his thesis, but he suggested perhaps the university or the government could be interested in carrying it on.

Mr. Devine ran a similar food price survey last year, that information contributing to his master of science degree in agricultural economics.

The 1969 survey revealed that stores in underprivileged areas of the city charged higher prices than those in affluent areas; that prices increased at the end of the month, when people usually get paid; and that advertisements increased then, "implying a lower priced food basket."

Again the response was excellent , and it was from all over Northern Alberta and parts of British Columbia, Saskatchewan, Ontario, and the Maritimes. Various Chambers of Commerce and chapters of the Canadian Association of Consumers requested to have their local supermarkets compared with those of neighboring towns and, of course, the Edmonton market. Store managers continued to phone asking about the survey and particularly to be put on the mailing list. By May 22, 1970, the comparative analysis included such Alberta rural centers as Red Deer, Athabasca, Edson, Vermilion, Wainwright, Lloydminster, Ponoka, Morinville, Barrhead, Vegreville, and Fort Nelson, British Columbia.

After 21 weeks of examination the price analysis and its distribution was terminated. Time and financial limitations were the major constraints preventing continued publication. Results of the market experiment had to be evaluated. The following paragraphs will test the original hypothesis by evaluating the influence additional market information had on price efficiency and market performance.

CHAPTER VI

THE RELATIONSHIP BETWEEN MARKET INTELLIGENCE, EFFICIENCY, AND PERFORMANCE

Examining the influence that additional information had on the market in terms of Vaile's price efficiency criteria simultaneously tests the validity of the original postulates and at a minimum allows value judgements to be made about market performance.¹ Many of the statements to follow regarding price efficiency, however, are considered *conditional* because the experiment did not measure the influence of numerous independent exogenous variables acting upon the market.

Price Efficiency Evaluation

The ease of making contact among prospective buyers and sellers was enhanced as a direct result of the published information. Consumers receiving the market analysis summary could broadly perceive and subsequently compare individual food price levels from numerous outlets without personally frequenting each one of them. By weighting, analyzing, and comparing individual food prices the computer basically outlined to potential buyers the terms of sale offered by various retailers.

The completeness of information concerning supply and demand conditions and the promptness of disseminating this knowledge were both improved as a result of the published data. Changes in supply and demand conditions, as reflected by retail price variations, were distributed to a broader degree throughout the environment and the ability of the

¹ R. S. Vaile's price efficiency criteria are outlined on page 19. R. S. Vaile, op. cit.

computer to determine the extent and impact of these changes was probably more efficient than the average consumer's. Similarly retailers receiving the new information had more complete information about competitor reactions to supply and demand conditions and consequently could adapt more readily to changing market conditions.

The adequacy of opportunity for "shopping" among different offerings in the formation of market judgements was improved. Consumers could readily choose from a wider number of outlets as indicated by the price level index comparisons and the historical ranking synopsis in the publication. The "shopping" opportunities for rural people receiving the information were increased to a large extent by the rural retail outlet comparisons. Price levels in neighboring towns and cities could be compared to each other and to the price levels existing in metropolitan Edmonton.

The equality of purchasing or bargaining power was improved because of the increased market knowledge, perhaps not through improved credit, but through better appreciation of retail strategies. The key implication is consumer response. Only a very small percentage of the consumers will actually move from one part of the city to another purchasing select items as specified by the new information. However, the very fact that a portion of the population does buy selectively or does change buying habits coupled with the fact an appreciably larger sector of the environment can recognize current price level differences means the market can immediately respond to "anti-social" strategies implemented by retail outlets. The potential "anti-chain" reaction overhanging the market can be a very significant element to be reckoned with by institutional management.

The accuracy of prices reflecting supply and demand conditions may or may not have been improved by the publicized prices. Assuming honest or legitimate prices do reflect changing market conditions, then discrepancies and mistakes brought to retailers' attention by consumers using the analysis as a format would improve the accuracy of market prices. Retailers did admit that they were particularly careful when making price changes on those items contained in the survey.

The additional information in the market would have a very limited influence on the economies of large-scale production but could possibly tend to restrict monopoly profits being achieved through "abnormally" high prices. Improved bargaining power and increased industrial responsibility tend to mitigate adverse market strategies. These strategies are discussed in the following paragraphs.

There was no apparent influence on vertical integration. Improved information did not appear to retard operational efficiency.

The economic effects of attempts to shift demand schedules were amplified both by the published information and by public appearances on radio and television. The range of price differences in outlets of Firm A were significantly decreased by its new strategy thus reducing the price discrepancies previously existing between the privileged and underprivileged sectors of the market. Firm A's attempt to shift its demand curve to the right and/or decrease its elasticity through a campaign of equal bargaining for all was actually promoted and ratified by the University through public media. Similarly Firm B's discount strategy resulted in very competitive prices, and these were continually published by the University's analysis. The firm's attempt to change

its demand curve was amplified by a free advertising program.¹ Firm B was competitive, and the market was continually being told about it.

The extent to which the market distributed income proportionally to the marginal product was enhanced by all of the factors mentioned above. Improved contact among participants, more complete and prompt information, improved market judgement, increased purchasing power, and improved pricing accuracy all tend to liberate the competitive potential existing in the market.

Improved market information and communication appeared to favorably influence price efficiency as tested by Vaile's criteria. Thus market exchange and adjustment functioned in a more responsive manner despite the industrial trend of specialized price making. Wider market knowledge may compensate for both the decline in general exchange transactions and the concentrated power to influence market conditions. Market performance improvement was potentially, if not actually, achieved. The validity of initial postulates will be examined to further substantiate the influence of market intelligence on market performance.

Examination of the Original Hypothesis

Results of the experiment indicated that the market readily received and rapidly responded to additional information. Considering those market participants who acknowledged receiving the information, it was unconditionally welcomed. Suggestions and constructive criticisms were received from producers, retailers, and consumers--not about the dissemination of new information as such, but regarding quality in

¹ Both firms may have been attempting to move down their demand curves as well.

food product, additional items, wider publicity, and more rapid communication. There were no unqualified negative reactions.

Previous contentions regarding price efficiency evaluation indicated that price efficiency was positively correlated with the level of market intelligence and consequently increased with more informative communication.

Exchange and operational efficiency can be positively correlated and consequently simultaneously improved even under concentrated market conditions. Testing the validity of the hypothesis with respect to market performance requires some additional insight. The following quotation adequately outlines a long-standing view of many economists.

Given that an industry is progressive and that firms in the industry are competitive with respect to cost-reducing innovations, both technological and organizational; and given that market information is reliable, widely disseminated, and accurately interpreted, the two elements of performance will usually be negatively correlated. The problem of market efficiency becomes one of choice between operational and exchange efficiency, or the maintenance of a balance between them.¹

A positive change in one variable is considered to be accompanied by a negative reaction in the other. Specifically operational efficiency is believed to increase with vertical integration and market concentration but to the detriment of exchange efficiency. This approach may be historically valid but not necessarily irreversible. If, as hypothesized, exchange efficiency can be improved through more informative communication, then a potential positive relationship may well be liberated through advancements in market intelligence. If exchange efficiency is not beyond improvement, then why should such

¹ R. R. Hurnanen, "Vertical Integration and Concentration in the Alberta Broiler Industry" (unpublished MSc. thesis, University of Alberta, Department of Agricultural Economics and Rural Sociology, 1970), p. 23.

improvement necessarily be to the detriment of operational efficiency? Vertical integration, market power, industrial planning, and specialized market functions promote advances in operational efficiency but more informative communication and efficient exchange does not and will not destroy these operational attributes. Mutilating existing market structures for the sake of competitive efficiency is not the only means of enhancing exchange efficiency. In summary, it is contended that improvements in market exchange enhance, not retard, the operational function of adding form, time, and place utilities to commodities in moving them from producers to consumers, and at a minimum, a zero correlation would again have a positive influence on the market.¹

Improved information and its dissemination liberates much of the competitive potential existing in the market. The validity of this hypothesis is substantiated by both the observations made on price efficiency and the previous contentions regarding the relationship between pricing and operational efficiency. Efficiency and performance

¹ In addition, one could seriously question even using the hypothetical conditions described in the quotation on page 46 as criteria in evaluating market efficiency and performance. In reality there is no perfect competition or accurate, reliable, and widely disseminated information so why base current performance evaluation and policy development on that format. The quotation should read: Given that an industry is progressive and that firms in the industry are competitive with respect to cost-reducing innovations, both technological and organizational; *and given that market information is often unreliable, poorly disseminated, and often inaccurately interpreted, the two elements of performance will be negatively correlated* if structural alterations are employed to produce increases in exchange efficiency.

can be considered synonymous when evaluating changing market conditions, precluding any negative correlations with market structure and conduct that result from pricing and operational improvements.

A highly informed public or market environment enhances the degree of social responsibility existing in the industrial community.

With wide public knowledge firms tend to buffer extreme changes in strategies that would potentially create an adverse public image--large price increases are a case in point. There are several implications surrounding social awareness, industrial responsibility, and price controls that warrant attention.

The stabilization (or reduction) of aggregate price levels causes the equity base in the market to shift in favor of the under-privileged. Price reductions are marginally far more important to those that "have not" than they are to those who "have." For example, if the average consumer in Edmonton could save even \$25 per year through improved market knowledge, lower or more stable food prices, and/or more selective buying, it would mean a redistribution of \$10,000,000 in the city of Edmonton alone.¹ In other words, the public refrains from paying too dearly for consumer products, thus tempering market price increases, while the demand for higher wages may well be buffered by the increase in discretionary income.

John Kenneth Galbraith recently indicated in Weekend Magazine that "The Consumer Has Lost Control."² It is true that in an uninformed

¹ \$25 x 400,000 people = \$10,000,000.

² J. K. Galbraith, The Edmonton Journal Weekend Magazine, "The Consumer Has Lost Control," March 21, 1970.

environment large organizations can create their own demand, set the prices the market will bear, and revel in the joys of market ignorance. However, knowledge puts some of the control back into the hands of the consumer, and from recent observations he well appreciates that fact. The mechanism, in part at least, for improved social control, economic, performance, and operational democracy is knowledge. In essence, management must be responsible to informed social interests or face the very real possibility of government price controls.

The current federal campaign against inflation is largely based on the principles of improved information and social responsibility. The following article was published on June 13, 1970.

PRICE-MONITORING NEXT FOR STORES

OTTAWA(CP) - The federal prices and incomes commission has worked out details of a month-by-month price-checking program with major Canadian retail stores as part of its program to fight price inflation.

The commission said Friday night that details of a regular price-monitoring system in cooperation with grocery, department, variety and discount stores, will be announced next Wednesday.

Price commissioner George E. Freeman said in a Toronto speech Tuesday that retailers have worked out the plan to watch prices in a series of meetings with commission staff across Canada.

"Most of the large wholesale and retail houses in the country have agreed to participate in a monthly reporting system which provides data on current markups by product groupings for comparison with markups of earlier years," Mr. Freeman said.

The monitoring system was developed following a national price-stability conference organized last February.

Merchants agreed then that price markups this year would be limited to those necessary to maintain profit margins no higher than 1969 margins. The restraint formula was to be applied to each category of goods in general merchandising and to over-all sales in the case of grocery merchants.

When price increases result from higher charges by suppliers, the commission can pursue its investigation back to the wholesaler or to the manufacturer or processor.
...¹

The success of the anti-inflation program is not easily measured because of the uncontrolled nature of the program. As previously mentioned, the large number of uncontrolled independent variables in the market defy the development of unqualified conclusions. In summary, however, it is interesting to note how the Federal Prices and Incomes Commission measures the programs's performance.

CHECKS SHOW RETAIL CHAINS CURBING PRICES

OTTAWA - Supermarkets and other retail chains are keeping their prices within the limits agreed upon at the National Conference on Price Stability, Prices and Incomes Commissioner A. G. Barrow said yesterday.

He made the comment at a press conference outlining the price surveillance program of the commission among retailers that he and 18 commission officials are running. Periodic reports on the results of the price monitoring are to be made, he promised.

The price monitoring program is being conducted among the largest retail chains in Canada, in the form of a monthly reporting system in which the chains supply the commission with details of price margins. For the purpose of comparison, similar data for each month last year has been supplied to the commission. "This information now is being analyzed by the Commission each month and, if initial markups are found to exceed the markup in 1969, the company involved is asked to reduce its markup or gross profit after consideration of justifiable increases in expenses since 1969," Mr. Barrow said.

In addition to the price reporting system, the commission is relying on spot checks and regular contacts between its officials and retailers to catch price increases.

Supermarkets reporting regularly to the commission are: Great A and P Tea Co. Ltd. of Toronto, Canada Safeway Ltd. of Winnipeg, Dominion Stores Ltd., of Toronto, Loblaw Groceterias Co. Ltd. of Toronto, M. Loeb Ltd. of Ottawa, Oshawa Wholesale Ltd. of Toronto, Steinberg's Ltd. of Montréal and Super Valu Food Stores, a subsidiary of Super Valu Stores Inc. of Minneapolis.

...

¹ The Edmonton Journal, "Price-monitoring Next for Stores," June 13, 1970.

The retail monitoring system has already resulted in some rollback of prices increases, but Mr. Barrow contends the more important role of the commission has been to deter people from making price increases in the first place.

...

"The true impact of this kind of program cannot be measured by statistics, reviews or studies of price increases.

"The real success of the program should be evaluated in terms of the price increases which have not taken place or which have been smaller than they would have been without the criteria.

"Its success is that Canadian industry appears to be accepting and applying the price restraint criteria to their pricing policies for 1970 and this should in turn be reflected in a slowing down in the rate of price increases." [Italics the author's.]¹

In summary, information can provide society with the knowledge and perhaps the power and control required to maintain and improve market performance.

¹ David Crane, The Toronto Globe and Mail, "Checks Show Retail Chains Curbing Prices," June 18, 1970.

CHAPTER VII

CONCLUSIONS AND RECOMMENDATIONS

Summary and Implications

The market plays an intimate role in the food industry, particularly at the retail level where the number of exchange transactions approach infinity. The role of the market is to bring buyers and sellers together to ensure the quantity demanded equals the quantity supplied for each commodity. Market information and communication facilitate exchange between participants thus enabling the market to converge, adjust, and potentially clear itself.

Suboptimal market performance is often attributed to market ignorance. Insufficient knowledge and poor communication restrict the effective coordination necessary for efficient exchange. There is a basic need for the perpetual improvement of information collection, analysis, and dissemination in the system.

Two initial research programs examined the Edmonton retail food market during the period February, 1968, to July, 1969. Noticeable price differences were recorded between firms, regions of the city, individual stores of major chains, affluent and underprivileged sectors of society, and different time periods. In short, the underprivileged paid more for food, prices were lowest in the more competitive regions, particularly where discount operations were situated, prices rose at the end of the month corresponding to the normal time income cheques were received, and advertisements were misleading and often not adhered to by major chains. In examining the price level differences existing

in various neighborhoods, it was apparent that the market was being segmented by one if not several retail chains.

As a direct result of the empirical observations a recommendation was made to the effect that all stores within one chain should charge identical prices for homogeneous products subject to marginal cost differences. It was hypothesized that such a recommendation, if implemented, would increase the level of competition, facilitate more equal bargaining for all consumers, and stabilize or reduce the aggregate price level.

In January, 1970, Firm A, a major chain in Edmonton, announced they were implementing a policy of standard prices through the metropolitan center. In other words, before the public became aware of any adverse market activities, the firm strengthened its public image by disseminating a program of equal bargaining for all.

On January 20, 1970, Firm B widely publicized information to the effect that all its outlets would be converted into discount operations. On January 26, Firm D announced it was leaving the market altogether. The chain of events aroused public interest and concern. Price levels, market strategies, and store images had all changed, but no one was sure of the extent of the changes or of the contingent implications. On February 1, 1970, the University began monitoring retail food prices for the third consecutive year.

Results of the analysis indicated that previous research predictions were basically valid. Firm A was no longer the most competitive chain because other chain stores were now able to price at lower levels. The range in price differences had diminished as well. During this

period the University made the following hypotheses: (1) The market required and would readily receive additional information; (2) exchange efficiency could be improved by more informative communication; (3) exchange and operational efficiency could be positively correlated and consequently simultaneously improved; (4) improved information liberates competitive potential in the market; and (5) a higher form of public awareness induces a greater degree of social responsibility into the industrial community.

The market information was collected, analyzed, and disseminated on a weekly basis. Dissemination was facilitated through the press, radio, television, and private publication. There was a positive response by producers, retailers, and consumers. Requests for the information and questions about the research were received from all over Alberta and various parts of Canada. Retailers volunteered their cooperation in giving price information, consumers volunteered funds and time for price collection and analysis, and producers wanted to know when and where to buy as well as the rationale behind price differences and demand differences at various levels of the food marketing system. The dissemination of the information was terminated in June, 1970.

Results of the experiment indicated that information was a valuable economic resource. The market wanted more information; it responded to improved communication and ratified the research program on economic, social, and political grounds. Retailers desired the information for strategic purposes because they appreciated the power associated with effective efficient market adjustment. They also recognized the influence information could have in determining consumer

attitudes and subsequent sales volume. Consumers, on the other hand, basically wanted improved bargaining power in the market and a wide scope of retail price comparisons coupled with the ability to make selective purchasing decisions helped satisfy that need.

In summary, market strategy and, therefore, the level of market performance and ultimately the degree of social welfare are largely determined by differentiation. Differentiation of products, prices, qualities, services, strategies, and people is inversely correlated with the level of environmental knowledge. More informative communication coupled with enhanced information theory and its infinite derivatives may reduce the undesired manipulative influences of differentiation and perpetuate operational democracy.

Limitations and Research Recommendations

The major limitation in a research project of this nature is the uncontrollable type of the market. As a consequence, all conclusions are conditional and must be qualified. Market prices and competitive strategies of participants are influenced and subsequently altered by numerous information flows. Changes in management, competition, government, and public pressures such as labor strikes all influence the market's continual adjustment to changing supply and demand conditions. Complete control of these numerous exogenous variables is impossible and limited control requires vast financial resources.

The research program was limited financially. To more adequately monitor the response to improved information two at least partially controlled markets would be desirable, for example, Edmonton and Calgary.

One market could be monitored in the absence of distributed information while the second market would be subjected to the analyzed results. A considerable amount of time and money would be necessary to insure both a continual collection of accurate data and a widely publicized information program. The steady use of public communication media and even direct mailing require extensive financing.

From an operational viewpoint an information program similar to the University's experiment could well be implemented on a continual basis. Price indexes could be established for various commodity groups and distributed as public knowledge. Such a program could work on a similar basis to that of stock market quotations. For example, the press could publish various index quotations on a basket of food items indicating that one food chain was up so many points, another was down, and so on. Producers, consumers, and the market in general could readily employ the information at their discretion.

Future programs in this area should strive for more timely information turnover. The value of information is usually inversely correlated with its age. A large data bank coupled with rapid analysis may well warrant a telephone or telex communication system to facilitate rapid and unmitigated flows of information to and from the various market channels.

Similarly more rapid information collection and distribution could improve current research in the area of marginal price analysis. More knowledge is needed on the marginal price differences existing between various levels of production and marketing. For producers to benefit from improved wholesale and retail information, the information must be linked in relevant terms to the adjustment alternatives at the producer level.

Timely, accurate, and accessible marginal price analysis could well help to stabilize adverse production fluctuations and aid producers in choosing and adequately diversifying within their production alternatives. Specialists at the retail level appreciate the value of information in planning market strategies. For producers to have equal bargaining power in the market they must have equal opportunity to use relevant information.

Subsequent information analysis would benefit by the incorporation of transportation costs into the data. Various areas in Alberta, for example, do not appear to warrant price differences on the basis of transportation alone. Research into these discrepancies could prove to be very informative.

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APPENDICES

APPENDIX A

Table 1

FOOD ITEMS PRICED IN 1969 SURVEY

Product	Brand	Weight
1. Sirloin steak, boneless	Beef	1 lb.
2. Round steak, bone in	Beef	1 lb.
3. Prime rib roast, standing	Beef	1 lb.
4. Blade roast, blade out	Beef	1 lb.
5. Stewing beef, boneless	Beef	1 lb.
6. Ground beef	Beef	1 lb.
7. Liver, sliced beef	Beef	1 lb.
8. Loin chops, center cut	Pork	1 lb.
9. Loin chops, rib end	Pork	1 lb.
10. Shoulder roast	Pork	1 lb.
11. Veal steak or cutlet		1 lb.
12. Lamb leg, fresh (shank on)		1 lb.
13. Cottage Roll, ready to eat	T.P.L. ¹	1 lb.
14. Fresh sausage	T.P.L.	1 lb.
15. Fresh sausage	P.L. ²	1 lb.
16. Bacon	Maple Leaf or T.P.L.	1 lb.
17. Bacon	P.L.	1 lb.
18. Wieners	Maple Leaf or T.P.L.	1 lb.
19. Wieners	P.L.	1 lb.
20. Chicken (2-4 lbs.)		1 lb.
21. Turkey (8-16 lbs.)	Grade A (not butterball)	1 lb.
22. Ham, bone in, ready to eat	T.P.L.	1 lb.
23. Ham, boneless, ready to eat	T.P.L.	1 lb.
24. Canned ham	Maple Leaf	1 1/2 lb.
25. Canned meat	Klik	12 oz.
26. Flaked white tuna	Clover Leaf	6 oz.
27. Sardines	Brunswick	3 1/4 oz.
28. Cohoe salmon	Gold Seal	7 3/4 oz.
29. Evaporated milk	Carnation	1 lb.
30. Instant skimmed milk powder	Mil-ko	3 lb.
31. Grade A large eggs	T.P.L.	1 doz.
32. Butter	T.P.L.	1 lb.
33. Cheeze Whiz	Kraft	1 lb.
34. Velveeta cheeze	Kraft	2 lb.
35. Cream cheeze	Philadelphia	4 oz.
36. Medium cheddar cheeze	Black Diamond	12 oz.
37. Potatoes, fresh	Canada Number 2 (any brand)	10 lb.
38. Tomatoes, fresh	Canada Number 1 (cello-pak)	4 tomatoes
39. Onions, fresh	Canada Number 1 (any brand)	3 lb. bag
40. Jell-O powder	Jell-O	3 oz.

continued

Table 1 (continued)

Product	Brand	Weight
41. Regular grind coffee	Nabob	1 lb.
42. Instant coffee	Maxwell House	2 oz.
43. Orange Pekoe tea bags	Red Rose	60 bags
44. Instant chocolate	Nestle's Quick	1 lb.
45. White granulated sugar	Alberta	2 lb.
46. Corn oil	Mazola	24 oz.
47. Shredded Wheat	Nabisco	18 biscuits
48. All-Bran	Kelloggs	16 oz.
49. Bread	P.L.	5-20 oz. loaves
50. Chocolate chip cookies	Dare	1 lb.
51. Potato chips	Nalleys	3 pak. 9 oz.
52. Potato chips	Old Dutch	3 pak. 9 oz.
53. Pre-sifted all purpose flour	Robin Hood	20 lb.
54. Shortening	Domestic	1 lb.
55. Pastry lard	T.P.L. or Maple Leaf Tenderflake	1 lb.
56. Margarine	Blue Bonnet or Good Luck	1 lb.
57. Margarine	Tulip or Rose	1 lb.
58. Margarine	P.L.	1 lb.
59. Fruit cocktail (choice)	Hunts	14 oz. can
60. Sliced peaches (fancy)	York or T.P.L.	14 oz. can
61. Cut green beans (fancy)	York or T.P.L.	14 oz. can
62. Cut green beans (choice)	P.L.	14 oz. can
63. Corn niblets (fancy)	Green Giant or T.P.L.	12 oz. can
64. Corn niblets (choice)	P.L.	12 oz. can
65. Deep buttered peas	Libby's or T.P.L.	14 oz. can
66. Beans with Pork	Libby's or T.P.L.	14 oz. can
67. Beans with Pork	P.L.	14 oz. can
68. Baby dills	Bicks or T.P.L.	15 oz. jar
69. Tomatoe juice	Libby's	48 oz. can
70. Tomatoe juice	Heinz	48 oz. can
71. Tomatoe juice	P.L.	48 oz. can
72. Canned pop	P.L.	10 oz. can
73. Strawberry jam	York or T.P.L.	48 oz. can
74. Peanut butter	York or T.P.L.	3 lb.
75. Honey	Alta-Sweet	1 lb.
76. Ice cream	T.P.L.	3 pints
77. Ice cream	P.L.	3 pints

¹ T.P.L. means Top Price Line.

² P.L. means Private Label.

Table 2

WEIGHTED PRICE INDEX BASED ON AGGREGATE VALUE OF
PER CAPITA FOOD CONSUMPTION BY ITEM

Food Items	Share of Total Food Basket (percent)
Beef	11.97
Pork	3.59
Veal and Lamb	0.59
Chicken and Turkey	3.79
Sausage	0.95
Bacon	1.88
Weiners	1.79
Ham (Fresh)	1.53
Ham (Canned)	0.34
Meat (Canned)	1.88
Fish	1.90
Eggs	4.40
Dairy Products	17.40
Fats and Oils	4.90
Fruits	8.00
Vegetables	10.30
Potatoes	2.90
Cereal Products	7.40
Sugars and Sweeteners	7.30
Soup, Baby Food, and Desserts	1.10
Coffee, Tea, and Cocoa	3.60
Miscellaneous (Melons, nuts, etc.)	2.49
	100.00

28.31¹

71.69²

¹ M. H. Hawkins, "An Analysis of Structure and Conduct in the Wholesale Meat Industry in Ohio" (unpublished Ph.D. dissertation, Ohio State University, 1967).

² United States National Commission on Food Marketing Technical Study No. 7, op. cit., p. 7. Also, Canada Dominion Bureau of Statistics, Urban Family Food Expenditure (Ottawa: Queen's Printer and Controller of Stationery, 1962), pp. 46-53.

Socio-Economic Delineation

The city of Edmonton was divided into socio-economic categories. The delineation was based on a recent study on community opportunity in Edmonton.¹ The social area analysis involved several census variables to delineate socially homogeneous areas of Edmonton. Seven variables were used for this study:

- (1) Age distribution of population,
- (2) origin of birth,
- (3) years of completed education,
- (4) labor and management skills,
- (5) income,
- (6) age of dwelling units,
- (7) social rank scores.²

Two distinct socio-economic classifications were developed from the variables in question. A privileged or affluent sector of the population was distinguished from an underprivileged sector. The underprivileged population had the following characteristics in this study: they were 65 years of age and over, foreign born, had not completed more than three to five years education, were semi-skilled or laborers, had low income per head and family,³ were characterized by low social rank scores, and occupied dwellings constructed before 1920.

¹ George Kupfer, Community Opportunity Assessment (Edmonton: Alberta Human Resources Research Development Executive Council, 1967).

² A Social Rank Index was developed in Kupfer's study to give a picture of the concentration of various socio-economic characteristics in the population. This index was used in the present analysis to help segregate areas of the city with respect to overall social well-being (and opportunity) of the people involved.

³ Average wage and salary income per head ranged from \$2,000 to \$4,999, and for families ranged from \$3,000 to \$5,999.

Stores used in the price survey were classified with respect to the two socio-economic regions. One group of stores theoretically represented the high ranking socio-economic populations, while the second group catered to the underprivileged sector. Analytical comparisons carried out on the two regions involved price levels, price variance, individual stores, different chains, and different time periods.

Frequency Analysis of Price Discrepancies

The following example outlines the basic technique used in the analysis. Ground beef was chosen as the product to be examined and its prices were observed in week two of the survey in all stores affiliated with Firm A. The results are as indicated below.

Table 3

PRICE FREQUENCY ANALYSIS

Week 2	Store Number															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Price of Ground Beef	65	65	65	65	65	65	65	65	56	65	65	59	59	65	65	67

The value that occurs most frequently is 65; consequently, this is the value of the mode and is used as the price norm for that week. Discrepancies are evident in store numbers 9, 12, and 13, and all three price differences are at least greater than 5 percent of the price mode. As a result, the value 3 represents the frequency of price discrepancies in ground beef during week 2.

The following table summarizes the results of the frequency analysis undertaken on all beef prices monitored in the 13-week survey.

Table 4

FREQUENCY ANALYSIS OF PRICE DISCREPANCIES IN BEEF PRODUCTS

Weeks	Frequency of Price Discrepancies							Weekly Total All Products
	Sirloin Steak	Round Steak	Prime Rib Roast	Blade Roast	Stewing Beef	Ground Beef	Liver (Beef)	
1	4	2	5	6	2	1	1	21
2	5	3	0	3	0	3	1	15
3	1	2	0	6	2	3	3	17
4	1	1	3	8	2	1	2	18
5	3	4	5	7	1	5	2	27
6	0	2	0	4	0	8	0	14
7	0	3	1	3	0	2	1	10
8	4	6	1	5	3	5	1	25
9	3	5	2	6	2	7	0	25
10	6	5	7	4	1	7	0	30
11	1	4	5	6	3	8	4	31
12	5	9	9	6	7	2	4	42
13	4	6	6	2	6	5	2	31
Product Total All Weeks	37	52	44	66	29	57	21	306

The maximum number of possible prices is 1,546 (13 x 16 x 7), however, approximately 80 prices were not recorded because the store did not carry the item at the particular time. As a result, price discrepancies occurred approximately 22 percent of the time (306/1566 x 100). In other words, Firm A had a different price for each beef item in at least one of every five stores within the city.

Chi-Square Computation and Regression Analysis

A comparison of price levels, price variation, and the range of variation was undertaken to determine if a relationship existed between individual store price levels and price variation. Are the highest priced stores constantly those with relatively volatile prices? Two tests were carried out--one using all stores in the survey, and the second using only those stores in Firm A.

The null hypothesis was that no relationship existed between price variation and the actual weighted price index. The hypothesis was first tested by computing the chi-square for an appropriate contingency table.¹ Stores were ranked as high and low with respect to both level and variances. The median for each set of numbers was used to rank figures insuring adequate representation in each cell. The chi-square was computed using a conventional format:

$$\chi^2 = \sum_i \sum_j \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$

Using all stores, the calculated chi-square (2.77) was less than the chi-square value which was expected due to randomness (3.84); the

¹ Bernard Ostle, Statistics in Research (Ames, Iowa: Iowa State University Press, 1964), pp. 129-130.

hypothesis could not be rejected. By contrast using Firm A stores alone, the calculated chi-square (16.0) was greater than the value expected due to randomness (3.84); therefore the hypothesis was rejected. From these results, the weighted price index variation was apparently independent of the weighted price index level for all stores yet showed a definite relationship for stores in Firm A.

To confirm the former results an attempt was made to determine to what degree price variance affected the weighted price level.¹ The weighted price index level was used as the dependent variable. One independent variable was used, namely, the weighted price variation.

The functional relationship was expressed as follows:

$$X_1 = f(X_2)$$

where

X_1 = weighted price index levels, and

X_2 = weighted price variations.

The functional form was linear,

$$\hat{X}_1 = \hat{\beta}_1 + \hat{\beta}_2 X_2 .$$

The regression equations contained all positive coefficients, that is, positive slopes and positive intercept terms. Using all stores in the survey, the regression equation was as follows:

$$\hat{X}_1 = 6,680.6289 + 0.0089162X_2,$$

and for Firm A stores only, the equation was:

$$\hat{X}_1 = 6,524.1792 + 0.000202X_2.$$

Both equations indicate a positive relationship between price level and variation. The coefficient of determination for the former equation was 0.02366, indicating 2.36 percent of the variation in the weighted

¹ K. A. Fox, Intermediate Economic Statistics (New York: John Wiley & Sons Ltd., 1968), pp. 96-102.

price level was explained by the variation in the independent variable. The standard error of the coefficient was 0.0112, resulting in a calculated students t distribution value of 0.801. To comply with the null hypothesis, the regression coefficient should equal zero. The alternate hypothesis is that the regression coefficient is greater than zero. Using 28 degrees of freedom at the 95 percent probability level, the expected t value due to randomness (2.048) was greater than the calculated t value (0.801). As a result the null hypothesis that the two variables are unrelated could not be rejected. The two variables appear to have no correlation with or affect upon one another in the population from which the sample observations were drawn.

Conversely, the coefficient of determination for the latter equation (using Firm A stores) was 0.2745, indicating 27.45 percent of the variation in weighted price levels was explained by the variation in the independent variable. Using 15 degrees of freedom at the 95 percent probability level, the expected t value due to randomness (2.131) was less than the calculated t value (2.301). As a result, the null hypothesis was rejected and the alternate hypothesis was accepted; the two variables were related or there was a correlation between price variance and price level.

These results confirmed those of the chi-square computations. The weighted price index variation was independent of the weighted price index level, using all stores in the survey, while a definite relationship (positive) existed between the two variables for stores in Firm A.

Table 5

NAMES AND ADDRESSES OF RETAIL STORES IN 1969 PRICE SURVEY

Name	Address
Co-op	12725 - 82 Street
Discount	14735 - 125 Avenue
Discount	7939 Argyle Road
Dominion	10125 Princess Elizabeth Avenue
Dominion	Bonnie Doon Shopping Centre
Economart	62 Street and 101 Avenue
IGA	11626 - 87 Avenue
Loblaws	107 Avenue and 142 Street
Loblaws	10210 Princess Elizabeth Avenue
Loblaws	109 Street and 72 Avenue
Loblaws	50 Street and 101 Avenue
Safeway	14920 - 87 Avenue
Safeway	156 Street and 87 Avenue
Safeway	Centennial Mall
Safeway	12620 - 132 Avenue
Safeway	9411 Jasper Avenue
Safeway	10725 - 97 Street
Safeway	102 Street and Princess Elizabeth Avenue
Safeway	12804 - 82 Street
Safeway	8930 - 82 Avenue
Safeway	8210 - 109 Street
Safeway	8065 - 104 Street
Safeway	6835 - 83 Street
Safeway	7455 - 101 Avenue
Safeway	9532 - 87 Street
Safeway	Capilano Shopping Centre
Safeway	Sherwood Park
Woodwards	Westmount Shopping Centre
Woodwards	Northgate Shopping Centre

APPENDIX B

Table 6

FOOD ITEMS PRICED IN 1970 SURVEY

Product	Brand	Weight
1. Sirloin Steak, bone in	Beef	1 lb.
2. Round Steak, bone in	Beef	1 lb.
3. Prime Rib Roast, standing	Beef	1 lb.
4. Semi-boneless Chuck Roast	Beef	1 lb.
5. Stewing Beef, boneless	Beef	1 lb.
6. Ground Beef	Beef	1 lb.
7. Beef Sausage, fresh	T.P.L.	1 lb.
8. Pork Sausage, fresh	T.P.L.	1 lb.
9. Pork Shoulder Roast, bone in	Pork	1 lb.
10. Bacon	Maple Leaf or T.P.L.	1 lb.
11. Weiners	Maple Leaf or T.P.L.	1 lb.
12. Balogna	T.P.L.	1 lb.
13. Ham, bone out, ready to eat	T.P.L.	1 lb.
14. Chicken (2-4 lb.) whole Grade A	T.P.L.	1 lb.
15. Canned Ham	Maple Leaf or T.P.L.	1 1/2 lb.
16. Eggs, Grade A large	T.P.L.	1 doz.
17. Butter	T.P.L.	1 lb.
18. Cheeze Whiz	Kraft	1 lb.
19. Velveeta Cheeze	Kraft	1 lb.
20. Med. Cheddar	Black Diamond	12 oz.
21. Mild Cheddar	P.L.	1 lb.
22. Shortening	Crisco	1 lb.
23. Shortening	Domestic	1 lb.
24. Margarine	Blue Bonnet	2 lb.
25. Ice Cream	T.P.L.	3 pts.
26. Ice Cream	P.L.	3 pts.
27. Frozen Peas	York or T.P.L.	2 lb.
28. Frozen Corn	York or T.P.L.	2 lb.
29. Apple Juice	Sun Rype or T.P.L.	48 oz.
30. Tomato Juice	Heinz	48 oz.
31. Tomato Juice	P.L.	48 oz.

continued

Table 6 (continued)

Product	Brand	Weight
32. Potatoes, fresh	Canada No. 1	10 lbs.
33. Tomatoes, fresh	Canada No. 1 (Cello Pak)	4 tom.
34. Onions, fresh	Canada No. 1	3 lb. bag
35. Regular grind Coffee	Nabob	1 lb.
36. Instant Coffee	Maxwell House	6 oz.
37. Orange Pekoe Tea Bags	Red Rose	60 bags
38. Instant Chocolate	Nestle's Quick	2 lb.
39. Peanut Butter (Smooth)	York or T.P.L.	40 ox. can
40. Honey	Alta Sweet	2 lb.
41. Corn Oil	Mazola	32 oz.
42. Tomato Catsup	Heinz	15 oz.
43. Flour, Pre-sifted, all purpose	Robin Hood	20 lb.
44. Kellogg's Corn Flakes	Kellogg's	16 oz.
45. Shredded Wheat	Nabisco	18 biscuits
46. Evaporated Milk	Carnation or T.P.L.	6-1 lb. cans
47. Skim Milk Powder	Mil-Ko or T.P.L.	1-3 lb. box
48. Spaghetti (Cheeze & Tomato Sauce)	Libby's or T.P.L.	2-14 oz. cans
49. Pork and Beans	Libby's or T.P.L.	2-14 oz. cans
50. Peaches sliced (fancy)	York or T.P.L.	2-14 oz. cans
51. Fruit Cocktail (choice)	Hunts	2-14 oz. cans
52. Peas, canned (fancy)	Del Monte or T.P.L.	2-14 oz. cans
53. Corn Niblets (fancy)	Green Giant or T.P.L.	2-12 oz. cans
54. Tomatoes, canned	Alymer or T.P.L.	2-19 oz. cans
55. Tomato Soup	Campbells	2-10 oz. cans
56. Cream of Chicken Soup	Campbells	2-10 oz. cans
57. Solid White Tuna	Clover Leaf	7 oz.
58. Sockeye Salmon	Clover Leaf	7 3/4 oz.
59. Cohoe Salmon	Gold Seal	7 3/4 oz.
60. Sardines	Brunswick	2-3 1/2 oz. cans

Table 7

NAMES AND ADDRESSES OF RETAIL STORES IN 1970 PRICE SURVEY

Name	Address
Safeway	14920 - 87 Avenue
Safeway	156 Street and 87 Avenue
Safeway	Centennial Mall
L-Mart	150 Street and Stony Plain Road
Safeway	12620 - 132 Avenue
Safeway	9020 Jasper Avenue
Safeway	10725 - 97 Street
L-Mart	10210 Princess Elizabeth Avenue
Safeway	11720 Jasper Avenue
Safeway	11850 - 103 Street
Safeway	12804 - 82 Street
Co-Op	12725 - 82 Street
IGA	11626 - 87 Avenue
Safeway	8210 - 109 Street
Safeway	8065 - 104 Street
L-Mart	109 Street and 72 Avenue
L-Mart	Bonnie Doon Shopping Centre
Safeway	7255 - 101 Avenue
Economart	6125 - 101 Avenue
Safeway	Capilano Shopping Centre
L-Mart	50 Street and 101 Avenue
Woodwards	Westmount Shopping Centre
Safeway	6835 - 83 Street
Woodwards	Northgate 97 Street & 137 Ave.
Safeway	8930 - 82 Avenue
Discount	14735 - 125 Avenue
Discount	7939 Argyle Road
Safeway	9532 - 87 Street
Safeway	Bonnie Doon Shopping Centre
Safeway	15020 Stony Plain Road
Batemans	11224 - 76 Avenue (Tomboy)
Safeway	114 Street and 40 Avenue
Safeway	5120 - 122 Street
IGA	111 Street and 51 Avenue
Safeway	5720 - 111 Street
IGA	Gold Bar Shopping Centre
Econo-Mart	Red Deer
Dominion	Red Deer
IGA	Red Deer
Safeway	Port-O-Call, Red Deer
Safeway	Paramount, Red Deer
Co-Op	Plaza Shopping Centre, Red Deer
Super-A-Store	Athabasca

continued

Table 7 (continued)

Name	Address
Save-Rite	Edson
L-Mart	107 Avenue and 115 Street
Hudson's Bay Co.	Fort Nelson
Zero Foodmart	Fort Nelson
Co-Op	Mannville
IGA Foodline	Lloydminster
Safeway	Lloydminster
Tomboy	Vermilion
Craig's	Vermilion
Co-Op	Vermilion
Solo Store	Mannville
O.K. Economy	Ponoka
Tomboy	Wainwright
Super-A	Wainwright
Woodwards	Chinook Shopping Centre, Calgary
Safeway	Chinook Shopping Centre, Calgary
Solo	Barrhead
IGA	Barrhead
Buy Low	Westlock
Linda's Supermarket	Westlock
Co-Op	Barrhead
IGA	Westlock
Co-Op	Vegreville
IGA	Vegreville
Co-Op	Ponoka
IGA	Ponoka
The Bay	Rocky Mountain House
Red & White	Donalda
IGA	Rocky Mountain House

Names and Addresses of People Requesting and
Receiving Information

Mrs. G. Scafe,
12407 Lansdowne Drive, # 101,
Edmonton 70, Alberta.

Mrs. S. Williamson,
Box 2008,
Edson, Alberta.

Mrs. G. Dunn,
10736 - 78 Avenue,
Edmonton, Alberta.

Mrs. J.S. Muldaney,
11316 - 57th Avenue,
Edmonton 70, Alberta.

Miss M.A. Strilchuk,
43, 7405 - 90 Avenue,
Edmonton, Alberta.

Mr. M. Woolford,
10109 - 80th Street,
Edmonton 80, Alberta.

Mrs. F. Brown,
R.R. 1,
Calahoo, Alberta.

Mrs. T.G. Williams,
Elmworth, Alberta.

Mrs. C. Blackburn,
204 Quesnell Crescent,
Edmonton, Alberta.

Mr. C.M. Coleman,
#11, 3615 - 119 Avenue,
Edmonton 21, Alberta.

B.A. Porter,
Box 31, R.R. 4,
Edmonton, Alberta.

Mrs. J. Flowers,
Dept. of Business Admin.
and Commerce,
University of Alberta,
Edmonton, Alberta.

Mrs. R. Peterson,
Mayerthorpe, Alberta.

Mrs. Carol Reimer,
16605 - 93 Avenue,
Edmonton, Alberta.

Mrs. R.B. Can,
R.R. 2,
Lacombe, Alberta.

Mrs. R. Rubuliak,
R.R. 2,
St. Albert, Alberta.

Mrs. C. Durant,
General Delivery,
Sherwood Park, Alberta.

Mr. R.L. McNaff,
9611 - 88 Avenue,
Edmonton, Alberta.

Laura Dorchester,
Box 1245,
Wetaskiwin, Alberta.

Mrs. W. Rozeboom,
12508 Lansdown Avenue,
Edmonton, Alberta.

Mrs. B. Lyseng,
R.R. #2,
Camrose, Alberta.

Mrs. F. Roberts,
Box 42,
Westlock, Alberta.

Mrs. M.J. Schurek,
12145 - 95 A Street,
Edmonton 18, Alberta.

Mrs. R.A. Russell,
37 Glenmore Crescent,
St. Albert, Alberta.

D.N. Hutchinson,
11616 - 35A Avenue,
Edmonton 73, Alberta.

Mrs. Mary Bishop,
Box 187,
Westlock, Alberta.

Mrs. J. Topilko,
10969 - 144 Street,
Edmonton, Alberta.

Mrs. G.H. Cline,
8911 Strathearn Drive,
Edmonton 82, Alberta.

Mrs. C.K. Van Petten,
Ohatan, Alberta.

Mrs. A. McCarthy,
13311 - 133 Avenue,
Edmonton 44, Alberta.

Mrs. J.E. Sample,
28, 10136 - 153 Street,
Edmonton, Alberta.

M. Bogola,
10911 - 116 Street,
Edmonton, Alberta.

Mrs. L. Baxter,
9748 - 63 Avenue,
Edmonton 81, Alberta.

Mrs. E. Christie,
10441 Saskatchewan Drive,
Edmonton 60, Alberta.

Mr. G. Derk,
7938 - 77 Avenue,
Edmonton 82, Alberta.

Mrs. J. Hunt,
4, 11303 - 132 Avenue,
Edmonton 30, Alberta.

Mrs. J. Lemay,
Box 242,
McLennan, Alberta.

Mrs. H. Caulson,
10708 - 58 Avenue,
Edmonton 70, Alberta.

Mrs. B. Murray,
14024 - 71 Street,
Edmonton 31, Alberta.

Mrs. W.D. Lawson,
Box 160,
Donalda, Alberta.

Mrs. Kenneth Knisley,
#606, 13910 Stony Plain Road,
Edmonton, Alberta.

Mrs. C.D. Giese,
206, 10720 - 108 Street,
Edmonton, Alberta.

Miss L.W. Janzen,
10049 - 111 Street,
Edmonton, Alberta.

Mrs. J. Luka,
11143 - 39A Avenue,
Edmonton, Alberta.

Mrs. S. Halina,
7218 - 83 Avenue,
Edmonton, Alberta.

Mrs. M. Perkins,
8716 - 72 Street,
Edmonton, Alberta.

R. Jlen spin,
Box 323,
Tofield, Alberta.

F.E. Willey,
11421 - 73 Street,
Edmonton 20, Alberta.

Mrs. J. Heitman,
R.R. 2,
Tofield, Alberta.

Mrs. D. Gillett,
9327 - 86 Street,
Edmonton 82, Alberta.

Mr. E. Kambeitz,
9639 - 66 Avenue,
Edmonton 62, Alberta.

Mrs. W. Gooley,
Glenevis, Alberta.

Mrs. R. Azynman,
3516 - 109 Street,
Edmonton 73, Alberta.

Mrs. S. Schnick,
Box 26,
Warburg, Alberta.

Mrs. J. Bird,
Blueberry Mountain, Alberta.

Mrs. E.D. Burgess,
12224 - 93 Street,
Edmonton 18, Alberta.

Mr. V. Warren,
8734 - 82 Avenue, # 7,
Edmonton, Alberta.

Mrs. C. Bergstrom,
7428 - 87 Avenue,
Edmonton, Alberta.

Mrs. A. Hesse,
11231 - 91 Street,
Edmonton, Alberta.

Mrs. J. Berghafer,
Fees Division,
Comptrollers Office,
University of Alberta,
Edmonton, Alberta.

Mrs. J. C. Deuel,
Dept. of Pharmacology,
University of Alberta,
Edmonton, Alberta.

Inflation Fighters,
102 Laurier Drive,
Edmonton, Alberta.

Mr. H. Teberman,
Room 774,
Chemical and Petroleum Engineering,
University of Alberta,
Edmonton, Alberta.

Mrs. Faye MacLean,
12707 - 91 Street, # 31,
Edmonton, Alberta.

Mrs. B. Wood,
141 Laurier Drive,
Edmonton 51, Alberta.

Mrs. B. Kathol,
10 Spruce Cresc.,
St. Albert, Alberta.

Mr. E. Uganezc,
#105R, 5721 - 112 Street,
Edmonton, Alberta.

Mr. S. Kamra,
#509, 9730 - 106 Street,
Edmonton, Alberta.

Mrs. Beryl Waite,
10623 - 50 Street,
Edmonton, Alberta.

Mrs. Barb Messenger,
Department of Business Administration
and Commerce,
University of Alberta.

Mrs. R. Kosinski,
9625 - 106A Avenue,
Edmonton, Alberta.

Miss Judy Strang,
Department of Household Economics,
University of Alberta.

Mrs. Linda Pickell,
Information Division,
Alberta Department of Agriculture,
9718 - 107 Street,
Edmonton, Alberta.

Mrs. & Mrs. Lee Beattie,
#311, 11532 - 40 Avenue,
Edmonton, Alberta.

Alberta Government Telephones,
Edmonton Jasper Place Exchange,
15751 - Stony Plain Rd.,
Edmonton, Alberta.
Attention: L. Dixon

Mrs. Chas. Bourassa,
11667 - 73 Avenue,
Edmonton 62, Alberta.

Ronn Bence,
10840 - 81 Avenue,
Edmonton, Alberta.

Mrs. L. F. Bence,
2951 Quinn Drive,
Regina, Saskatchewan.

Mrs. L. Moore,
P.O. Box 372,
Lancaster Park,
Edmonton, Alberta.

Miss I. M. Bull,
487 Duplex Avenue, #50,
Toronto 12, Ontario.

Mr. V. MacDonald,
Livestock Production Division,
Canada Dept. of Agriculture,
9820 - 107 Street,
Edmonton, Alberta.

Mr. Paul Hodgman,
District Agriculturist,
Provincial Building,
Red Deer, Alberta.

Mr. H. B. Borent,
Woodward Stores Ltd.,
101 Street and 102 Avenue,
Edmonton, Alberta.

Miss J. Gresiuk,
10039 - 111 Street,
Edmonton 12, Alberta.

Mrs. G. Sirois,
10539 - 48 Street,
Edmonton, Alberta.

Mr. D. Maxwell,
14345 - 123 Avenue,
Edmonton, Alberta.

Mrs. Jean Sohnle,
10935 - 117 Street,
Edmonton 17, Alberta.

Mrs. K. Dobson,
P.O. Box 750,
Athabasca, Alberta.

Mrs. J. A. Rushton,
Box 190,
Onoway, Alberta.

Mrs. S. Hurst,
#1006, 11025 - 82 Avenue,
Edmonton 61, Alberta.

Mrs. M. C. Maynard,
10837 - 139 Street,
Edmonton 40, Alberta.

Mr. A. N. deRocquingny,
Dept. of Consumer and Corporate Affairs,
450 Federal Building,
Edmonton, Alberta.

Mrs. S. Serediak,
Home Economics,
Austin O'Brien High School,
6110 - 95 Avenue,
Edmonton, Alberta.

Mrs. E. Marquardt,
Bruderheim, Alberta.

Mrs. Harry D. Rice,
Apt. A, 11950 - 100 Avenue,
Edmonton, Alberta.

Mrs. B. Woodhouse,
14515 - 91 Avenue,
Edmonton, Alberta.

Mrs. Rae Allen,
5551 - 113 Street,
Edmonton 70, Alberta.

Mrs. J. S. Duncan,
Box 1108,
Vermilion, Alberta.

Mrs. D. McDonald,
101 Laurier Drive,
Edmonton, Alberta.

Mrs. H. Peterson,
4508 - 107 Avenue,
Edmonton, Alberta.

D. B. Clutterham,
Box 1047,
Fort Nelson, British Columbia.

J. R. Biglow,
11008 - 145 Street,
Edmonton, Alberta.

Bill Murray,
9235 - 146 Street,
Edmonton, Alberta.

D. Murray,
8740 - 84 Avenue,
Edmonton, Alberta.

Mr. J. R. Boisvert,
784 Birch Avenue,
Sherwood Park, Alberta.

Mr. J. K. Curlock,
10203 - 70 Street,
Edmonton, Alberta.

D. A. Murray,
13803 - 133 Avenue,
Edmonton, Alberta.

Mr. K. W. Ryan,
#305, 9930 - 113 Street,
Edmonton, Alberta.

Mr. L. R. Jensen,
5324 - 109 Street,
Edmonton, Alberta.

Mrs. K. Dobson,
P.O. Box 750,
Athabasca, Alberta.

W. Rector,
47 Selkirk Blvd.,
Red Deer, Alberta.

Paul Hodgeman,
Dept. of Agriculture,
Treasury Branch Building,
Red Deer, Alberta.

Mr. D. Muloin,
12420 - 91 Street,
Edmonton, Alberta.

Mrs. Sharon Williamson,
Box 2008,
Edson, Alberta.

Mr. B. Bateman,
IGA,
111 Street and 51 Avenue,
Edmonton, Alberta.

Mrs. C. C. Robinson,
Box 70,
Ponoka, Alberta.

R. Westwood,
17 Malcolm Crescent,
Red Deer, Alberta.

D. B. Hicks,
Business Procedures Assistant,
Business Information Systems Department,
Alberta Government Telephones,
Box 2411,
Edmonton, Alberta.

Mrs. Joan Keay,
Box 157,
Fairview, Alberta.

Mrs. J. Goar,
8022 - 132 Avenue,
Edmonton, Alberta.

Mrs. Doris Walters,
10723 - 69 Street,
Edmonton, Alberta.

C. E. Paquin,
6407 - 94A Avenue,
Edmonton, Alberta.

Table 8

RETAIL FOOD PRICE ANALYSIS, WEEK ENDING MARCH 6 AND 7

Store	Address	Price Level Index		Ranking
		Week Ending March 6 and 7	Last Week	Two Weeks Ago
Discount	7939 Argyle Road	60.02	2	8
L-Mart	109 St. and 72 Ave.	60.69	1	1
L-Mart	Bonnie Doon Shopping Centre	60.81	4	2
L-Mart	50 St. and 101 Ave.	61.07	6	3
Discount	14735 - 125 Ave.	61.10	5	12
Safeway	12620 - 132 Ave.	62.05	12	9
L-Mart	150 St. & Stony Plain Road	62.13	7	6
Economart	62 St. and 101 Ave.	62.21	17	19
Safeway	117 St. and Jasper Ave.	62.27	13	17
Safeway	8930 - 82 Ave.	62.31	18	16
Safeway	6835 - 83 St.	62.35	22	21
Safeway	8065 - 104 St.	62.41	27	28
L-Mart	10210 Princess Elizabeth Ave.	62.45	3	4
Safeway	150 St. and Stony Plain Road	62.46	15	14
Woodwards	Northgate 97 St. & 137 Ave.	62.56	23	22
Safeway	156 St. and 87 Ave.	62.58	24	28
Safeway	8210 - 109 St.	62.60	29	23
Safeway	14920 - 87 Ave.	62.65	28	13
Safeway	9532 - 87 St.	62.67	11	11
Woodwards	Westmount Shopping Centre	62.68	30	5
Safeway	111 St. and 57 Ave.	62.78	31	31
Safeway	Centennial Mall	62.86	14	15
Safeway	Capilano Shopping Centre	63.12	21	24
Safeway	102 St. & Princess Elizabeth A.	63.13	9	25
Safeway	7455 - 101 Ave.	63.27	20	26
Safeway	Bonnie Doon Shopping Centre	63.65	8	18
Safeway	122 St. and 53 Ave.	64.13	25	18
Safeway	114 St. and 40 Ave.	64.25	19	7
IGA	111 St. and 51 Ave.	64.66	32	32
Batemans	112 St. and 76 Ave. (Tomboy)	64.79	33	33
IGA	11626 - 87 Ave.	64.86	34	34

WHILE THE PUBLISHERS BELIEVE THE INFORMATION AND COMMENT CONTAINED HEREIN IS CORRECT, THEY DISCLAIM ALL RESPONSIBILITY FOR SUCH ERRORS AS MAY OCCUR.

M.I.S. CONSULTING LTD.

Table 9

RETAIL FOOD PRICE ANALYSIS, WEEK ENDING MARCH 13 AND 14

Store	Address	Price Level Index	Last Week	Ranking Two Weeks Ago
		Week Ending March 13 and 14		
L-Mart	109 St. and 72 Ave.	59.93	2	1
Discount	7939 Argyle Road	60.62	1	2
L-Mart	50 St. and 101 Ave.	60.73	4	6
Discount	14735 - 125 Ave.	60.82	5	5
Safeway	Bonnie Doon Shopping Centre	61.07	30	8
L-Mart	Bonnie Doon Shopping Centre	61.10	3	4
L-Mart	150 St. & Stony Plain Road	61.11	7	7
Safeway	6835 - 83 St.	61.31	11	22
Safeway	12620 - 132 Avenue	61.50	6	12
Safeway	114 St. and 40 Ave.	61.77	32	19
Safeway	9532 - 87 St.	61.81	23	11
L-Mart	10210 Princess Elizabeth Ave.	61.82	13	3
Safeway	102 St. & Princess Elizabeth A.	61.86	28	9
Safeway	8930 - 82 Ave.	61.94	10	18
Safeway	Centennial Mall	61.97	26	14
Safeway	10725 - 97 St.	62.01	19	10
Safeway	117 St. & Jasper Ave.	62.12	9	13
Safeway	8065 - 104 St.	62.12	12	27
Economart	62 St. and 101 Ave.	62.15	8	17
Safeway	12804 - 82 St.	62.24	20	26
Safeway	Capilano Shopping Centre	62.54	27	21
Safeway	156 St. and 87 Ave.	62.57	16	24
Safeway	8210 - 109 St.	62.61	17	29
Safeway	14920 - 87 Ave.	62.68	22	28
Safeway	7455 - 101 Ave.	62.80	29	20
Safeway	150 St. & Stony Plain Road	62.86	14	15
Woodwards	Northgate 97 St. and 137 Ave.	63.31	15	23
Woodwards	Westmount Shopping Centre	63.65	24	30
Safeway	111 St. and 57 Ave.	63.70	25	31
Co-Op	12725 - 82 St.	64.98	21	35
Batemans	112 St. and 76 Ave. (Tomboy)	65.25	34	33
IGA	11626 - 87 Ave.	65.49	35	34
IGA	111 St. and 51 Ave.	66.00	33	32

Table 10

RETAIL FOOD PRICE ANALYSIS, WEEK ENDING MARCH 20 AND 21

Store	Address	Price Level Index		Ranking
		Week Ending March 20 and 21	Last Week	Two Weeks Ago
Discount	7939 Argyle Road	60.83	2	1
L-Mart	109 St. and 72 Ave.	61.23	1	2
L-Mart	50 St. and 101 Ave.	61.28	3	4
L-Mart	150 St. and Stony Plain Road	61.54	7	7
Safeway	6835 - 83 St.	62.38	8	11
Safeway	114 St. and 40 Ave.	62.58	10	32
Safeway	9532 - 87 St.	62.66	11	23
Safeway	8210 - 109 St.	62.75	25	17
Economart	62 St. and 101 Ave.	63.05	19	8
Safeway	8930 - 82 Ave.	63.06	14	10
Safeway	9411 Jasper Ave.	63.17	22	18
Safeway	8065 - 104 St.	63.19	18	12
Safeway	111 St. and 57 Ave.	63.27	31	25
Safeway	122 St. and 53 Ave.	63.28	21	31
Safeway	7455 - 101 Ave.	63.32	27	29
Safeway	150 St. and Stony Plain Road	63.48	28	14
Safeway	14920 - 87 Ave.	63.50	26	22
Safeway	Capilano Shopping Centre	63.54	23	27
Safeway	156 St. and 87 Ave.	63.69	24	16
Batemans	112 St. and 76 Ave. (Tomboy)	64.98	33	34
IGA	11626 - 87 Ave.	65.22	34	35
IGA	111 St. and 51 Ave.	65.50	35	33

Table 11

RETAIL FOOD PRICE ANALYSIS, WEEK ENDING MARCH 27 AND 28

Store	Address	Price Level Index Week Ending March 27 and 28	Last Week	Ranking Two Weeks Ago
L-Mart	50 St. and 101 Ave.	61.07	3	3
Discount	14735 - 125 Ave.	61.19	11	4
Discount	7939 Argyle Road	61.31	1	2
L-Mart	150 St. and Stony Plain Road	61.48	4	7
L-Mart	109 St. and 72 Ave.	61.83	2	1
L-Mart	Bonnie Doon Shopping Centre	62.06	21	6
L-Mart	10210 Princess Elizabeth Ave.	62.24	16	12
Economart	62 St. and 101 Ave.	63.12	9	19
Safeway	6835 - 83 St.	63.34	5	8
Safeway	12620 - 132 Ave.	63.39	14	9
Safeway	150 St. and Stony Plain Road	63.43	29	28
Safeway	8210 - 109 St.	63.61	8	25
Safeway	114 St. and 40 Ave.	63.64	6	10
Safeway	7455 - 101 Ave.	63.68	28	27
Safeway	9411 Jasper Ave.	63.73	24	22
Safeway	12804 - 82 St.	63.87	19	20
Safeway	9532 - 87 St.	63.87	7	11
Safeway	10725 - 97 St.	63.90	15	16
Safeway	111 St. and 57 Ave.	63.95	26	31
Safeway	Bonnie Doon Shopping Centre	64.01	12	5
Safeway	102 St. and Princess Elizabeth A	64.08	18	13
Safeway	122 St. and 53 Ave.	64.15	27	21
Safeway	156 St. and 87 Ave.	64.22	32	24
Safeway	8065 - 104 St.	64.24	25	18
IGA	111 St. and 51 Ave.	64.28	35	35
Safeway	Capilano Shopping Centre	64.56	31	23
Safeway	8930 - 82 Ave.	64.71	10	14
IGA	11626 - 87 Ave.	65.00	34	34
Batemans	112 St. and 76 Ave. (Tomboy)	65.33	33	33
Safeway	14920 - 87 Ave.	65.40	30	26
Co-Op	12725 - 82 St.	66.37	20	32
Woodwards	Northgate 97 St. and 137 Ave.	67.11	23	29

Table 12

RETAIL FOOD PRICE ANALYSIS, WEEK ENDING APRIL 3 AND 4

Store	Address	Price Level Index	Last Week	Ranking Two Weeks Ago
		Week Ending April 3 and 4		
L-Mart	109 St. and 72 Ave.	60.76	5	2
Discount	7939 Argyle Road	61.21	3	1
L-Mart	150 St. and Stony Plain Road	61.46	4	4
L-Mart	50 St. and 101 Ave.	61.66	1	3
L-Mart	10210 Princess Elizabeth Ave.	62.13	7	16
L-Mart	Bonnie Doon Shopping Centre	62.55	6	21
Safeway	6835 - 83 St.	63.12	9	5
Safeway	8210 - 109 St.	63.16	12	8
Safeway	10725 - 97 St.	63.42	21	15
Safeway	Centennial Mall	63.53	16	13
Safeway	Bonnie Doon Shopping Centre	63.55	23	12
Safeway	102 St. & Princess Elizabeth A.	63.57	24	18
Safeway	8065 - 104 St.	63.57	27	25
Safeway	8930 - 82 Ave.	63.62	30	10
Safeway	117 St. and Jasper Ave.	63.81	17	17
Safeway	114 St. and 40 Ave.	63.85	13	6
Safeway	156 St. and 87 Ave.	63.87	26	32
Safeway	150 St. and Stony Plain Road	63.87	11	29
Economart	62 St. and 101 Ave.	64.00	8	9
Woodwards	Westmount Shopping Centre	64.05	15	22
Safeway	14920 - 87 Ave.	64.09	33	30
Woodwards	Northgate 97 St. and 137 Ave.	64.67	35	23
IGA	11626 - 87 Ave.	65.25	31	34

Table 13

RETAIL FOOD PRICE ANALYSIS, WEEK ENDING APRIL 10 AND 11

Store	Address	Price Level Index	Last Week	Ranking Two Weeks Ago
		Week Ending April 10 and 11		
Discount	7939 Argyle Road	61.45	2	3
L-Mart	10210 Princess Elizabeth Ave.	61.56	5	7
L-Mart	109 St. and 72 Ave.	61.69	1	5
L-Mart	50 St. and 101 Ave.	62.02	4	1
L-Mart	Bonnie Doon Shopping Centre	62.45	6	6
Safeway	8930 - 82 Ave.	62.69	26	30
Safeway	6835 - 83 St.	62.71	7	9
L-Mart	105 St. & Stony Plain Road	62.84	3	4
Safeway	8065 - 104 St.	63.01	25	27
Safeway	111 St. and 57 Ave.	63.41	16	22
Safeway	8210 - 109 St.	63.61	8	12
Safeway	9411 Jasper Ave.	63.68	18	18
Safeway	102 St. & Princess Elizabeth A.	63.94	24	24
Safeway	Capilano Shopping Centre	63.95	10	29
Safeway	122 St. and 53 Ave.	63.97	14	25
Safeway	114 St. and 40 Ave.	64.03	28	13
Economart	62 St. and 101 Ave.	64.15	31	8
Safeway	156 St. and 87 Ave.	64.18	29	26
Safeway	10725 - 97 St.	64.21	21	21
Safeway	14920 - 87 Ave.	64.23	33	33
Safeway	150 St. and Stony Plain Road	64.48	30	11
IGA	11626 - 87 Ave.	64.87	35	31
Batemans	112 St. and 76 Ave. (Tomboy)	64.89	13	32
IGA	111 St. and 51 Ave.	66.13	15	28

Table 14

RETAIL FOOD PRICE ANALYSIS, WEEK ENDING APRIL 17 AND 18

Store	Address	Price Level Index	Last Week	Ranking Two Weeks Ago
		Week Ending April 17 and 18		
Discount	14735 - 125 Ave.	60.76	19	11
L-Mart	109 St. and 72 Ave.	60.82	3	1
L-Mart	50 St. and 101 Ave.	61.09	4	4
Discount	7939 Argyle Road	61.61	1	2
L-Mart	150 St. and Stony Plain Road	62.74	8	3
IGA	111 St. and 51 Ave.	63.40	35	15
Safeway	111 St. and 57 Ave.	63.61	10	16
Safeway	6835 - 83 St.	63.64	7	7
Safeway	114 St. and 40 Ave.	63.69	27	28
Safeway	9411 Jasper Ave.	63.82	23	18
Safeway	122 St. and 53 Ave.	63.89	26	14
Safeway	12620 - 132 Ave.	63.93	12	17
Safeway	8210 - 109 St.	63.96	22	8
Safeway	117 St. and Jasper Ave.	64.03	13	27
Safeway	8065 - 104 St.	64.09	9	25
Safeway	156 St. and 87 Ave.	64.15	29	29
Safeway	14920 - 87 Ave.	64.48	31	33
Batemans	112 St. and 76 Ave. (Tomboy)	64.89	34	13
Safeway	150 St. and Stony Plain Road	64.92	32	30
Woodwards	Westmount Shopping Centre	65.94	17	32
IGA	11626 - 87 Ave.	66.35	33	35

Table 15

RETAIL FOOD PRICE ANALYSIS, WEEK ENDING APRIL 24 AND 25

Store	Address	Price Level Index	Last Week	Ranking Two Weeks Ago
		Week Ending April 24 and 25		
Discount	14735 - 125 Ave.	61.14	1	0
L-Mart	50 St. and 101 Ave.	61.33	3	4
Discount	7939 Argyle Road	61.34	4	1
L-Mart	Bonnie Doon Shopping Centre	61.89	0	5
L-Mart	105 St. and Stony Plain Road	62.61	5	8
L-Mart	10210 Princess Elizabeth Ave.	62.93	0	2
Safeway	114 St. and Jasper Ave.	63.18	28	0
Safeway	122 St. and 53 Ave.	63.33	25	26
Safeway	111 St. and 57 Ave.	63.35	7	10
Safeway	102 St. and Princess Elizabeth A	63.37	0	24
Safeway	114 St. and 40 Ave.	63.42	23	27
Safeway	6835 - 83 St.	63.52	22	7
Safeway	Bonnie Doon Shopping Centre	63.54	0	0
Safeway	10725 - 97 St.	63.71	0	30
Safeway	9411 Jasper Ave.	63.72	24	23
Safeway	156 St. and 87 Ave.	64.08	30	29
Safeway	150 St. and Stony Plain Road	64.13	33	32
Safeway	14920 - 87 Ave.	64.18	31	31
Safeway	12620 - 132 Ave.	64.32	26	0
Batemans	112 St. and 76 Ave. (Tomboy)	64.42	32	34
IGA	111 St. and 51 Ave.	64.60	6	35
Woodwards	Westmount Shopping Centre	64.75	34	0
IGA	11626 - 87 Ave.	65.24	35	33

Table 16

RETAIL FOOD PRICE ANALYSIS, WEEK ENDING MAY 1 AND 2

Store	Address	Price Level Index		Ranking Two Weeks Ago
		Week Ending May 1 and 2	Last Week	
Discount	14735 - 125 Ave.	61.16	1	1
L-Mart	10210 Princess Elizabeth Ave.	61.68	6	0
L-Mart	50 St. and 101 Ave.	61.85	2	3
L-Mart	109 St. and 72 Ave.	61.87	0	2
Discount	7939 Argyle Road	61.98	3	4
L-Mart	Bonnie Doon Shopping Centre	62.03	4	0
Safeway	117 St. and Jasper Ave.	62.24	7	29
L-Mart	150 St. and Stony Plain Road	62.61	5	5
Safeway	Centennial Mall	63.09	0	0
Safeway	9532 - 87 St.	63.12	0	0
Safeway	9411 Jasper Ave.	63.26	28	25
Batemans	112 St. and 76 Ave. (Tomboy)	63.39	33	33
Safeway	122 St. and 53 Ave.	63.42	8	26
Safeway	111 St. and 57 Ave.	63.45	9	7
Safeway	Capilano Shopping Centre	63.47	0	0
Safeway	6835 - 83 St.	63.59	25	23
Safeway	114 St. and 40 Ave.	63.60	24	24
Safeway	156 St. and 87 Ave.	63.68	29	31
Woodwards	Westmount Shopping Centre	63.68	35	35
Safeway	8210 - 109 St.	63.81	0	28
Safeway	10725 - 97 St.	63.83	27	0
Safeway	102 St. and Princess Elizabeth A	63.89	10	0
Safeway	Bonnie Doon Shopping Centre	63.90	26	0
Safeway	14920 - 87 Ave.	63.94	31	32
Safeway	12620 - 132 Ave.	64.02	32	27
Safeway	8065 - 104 St.	64.04	0	30
Safeway	150 St. and Stony Plain Road	64.13	30	34
Woodwards	Northgate 94 St. and 137 Ave.	64.36	0	0
IGA	11626 - 87 Ave.	65.60	36	36
IGA	111 St. and 51 Ave.	65.61	0	0
IGA	Gold Bar Shopping Centre	66.01	0	0

Table 17

RETAIL FOOD PRICE ANALYSIS, WEEK ENDING MAY 8 AND 9

Store	Address	Price Level Index	Last Week	Ranking Two Weeks Ago
		Week Ending May 8 and 9		
Discount	14735 - 125 Ave.	61.10	1	1
L-Mart	109 St. and 72 Ave.	62.59	4	0
L-Mart	Bonnie Doon Shopping Centre	62.73	6	4
L-Mart	10210 Princess Elizabeth Ave.	62.80	2	6
Safeway	Centennial Mall	63.58	9	0
L-Mart	150 St. and Stony Plain Road	64.23	8	5
Safeway	150 St. and Stony Plain Road	64.62	39	37
Woodwards	Northgate 94 St. and 137 Ave.	64.69	40	0
Safeway	8210 - 109 St.	64.84	32	0
Safeway	102 St. & Princess Elizabeth A	64.87	34	10
Safeway	8065 - 104 St.	64.97	38	0
Econo-Mart	Red Deer	65.01	0	0
Safeway	10725 - 97 St.	65.12	33	34
L-Mart	50 St. and 101 Ave.	65.18	3	2
Safeway	12620 - 132 Ave.	65.29	37	39
Woodwards	Westmount Shopping Centre	65.33	31	42
Safeway	156 St. and 87 Ave.	65.47	30	36
Safeway	114 St. and 40 Ave.	65.50	29	31
Dominion	Red Deer	67.04	0	0
Safeway	Port-O-Call, Red Deer	67.44	0	0
Safeway	Paramount, Red Deer	67.72	0	0
Super A	Athabasca	69.58	0	0
Co-Op	Red Deer	70.67	0	0
IGA	Red Deer	70.80	0	0

Table 18

RETAIL FOOD PRICE ANALYSIS, WEEK ENDING MAY 15 AND 16

Store	Address	Price Level Index		Ranking	
		Week Ending May 15 and 16	Last Week	Two Weeks Ago	
Discount	14725 - 125 Ave.	62.39	1	1	
L-Mart	Bonnie Doon Shopping Centre	62.52	4	6	
L-Mart	107 Ave. and 115 St.	62.69	0	0	
L-Mart	109 St. and 72 Ave.	63.49	3	4	
L-Mart	105 St. and Stony Plain Road	63.54	8	8	
L-Mart	10210 Princess Elizabeth Ave.	63.63	5	2	
Batemans	112 St. and 76 Ave. (Tomboy)	63.98	0	12	
Safeway	117 St. and Jasper Ave.	64.09	0	7	
Safeway	Centennial Mall	64.11	7	9	
Safeway	114 St. and 40 Ave.	64.28	36	31	
Econo-Mart	Red Deer	64.50	18	0	
Safeway	150 St. & Stony Plain Road	64.51	9	41	
Safeway	122 St. and 53 Ave.	64.51	0	13	
Safeway	Bonnie Doon Shopping Centre	64.62	15	37	
Safeway	14920 - 87 Ave.	64.64	0	38	
Safeway	9411 Jasper Ave.	64.73	0	11	
Safeway	102 St. & Princess Elizabeth A.	64.84	16	36	
Safeway	111 St. and 57 Ave.	64.85	0	28	
Safeway	156 St. and 87 Ave.	64.92	39	32	
Safeway	8065 - 104 St.	64.92	17	40	
Safeway	8210 - 109 St.	65.06	12	34	
Safeway	10725 - 97 St.	65.12	19	35	
Woodwards	Westmount Shopping Centre	65.38	38	33	
Woodwards	Northgate 97 St. and 137 Ave.	65.67	11	42	
Co-Op	12725 - 82 St.	65.70	0	0	
IGA	11626 - 87 Ave.	65.70	0	43	
IGA	111 St. and 51 Ave.	65.80	0	44	
Safeway	12620 - 132 Ave.	65.84	37	39	
Safeway	Port-O-Call, Red Deer	66.17	41	0	
Safeway	Paramount, Red Deer	66.71	40	0	
Dominion	Red Deer	68.59	42	0	
IGA	Red Deer	68.99	45	0	
Co-Op	Plaza Shopping Centre, Red Deer	70.73	44	0	
Save-Rite	Edson	72.83	0	0	

Table 19

RETAIL FOOD PRICE ANALYSIS, WEEK ENDING MAY 22 AND 23

Store	Address	Price Level Index	Last Week	Ranking Two Weeks Ago
		Week Ending May 22 and 23		
Discount	14735 - 125 Ave.	62.84	1	1
Safeway	11720 and Jasper Avenue	63.95	8	0
L-Mart	150 St. and Stony Plain Road	64.18	4	8
Econo-Mart	Red Deer	64.92	13	18
Safeway	114 St. and 40 Ave.	64.93	10	46
Safeway	15020 Stony Plain Road	64.95	12	9
Safeway	14920 - 87 Ave.	64.96	15	0
Safeway	9020 Jasper Avenue	64.97	16	0
Safeway	156 St. and 87 Ave.	65.40	18	49
Safeway	5720 - 111 St.	65.43	17	0
Safeway	Centennial Mall	65.44	9	7
Batemans	11224 - 76 Ave. (Tomboy)	65.44	7	0
Safeway	5120 - 122 St.	65.54	11	0
Woodwards	Westmount Shopping Centre	65.78	23	48
Safeway	12620 - 132 Ave.	65.80	26	47
IGA	111 St. and 51 Ave.	65.87	27	0
IGA	11626 - 87 Ave.	66.20	24	0
Woodwards	Northgate 97 St. and 137 Ave.	66.58	25	11
Safeway	Paramount, Red Deer	66.59	49	50
Safeway	Port-O-Call, Red Deer	67.32	48	51
Co-Op	12725 - 82 St.	67.70	28	0
Dominion	Red Deer	68.46	50	52
Craig's	Vermilion	68.51	0	0
IGA	Red Deer	69.08	51	55
IGA Foodline	Lloydminster	70.27	0	0
Solo Store	Mannville	70.36	0	0
Co-Op	Mannville	70.79	0	0
O.K. Economy	Ponoka	70.91	0	0
Safeway	Lloydminster	71.07	0	0
Co-Op	Vermilion	72.52	0	0
Tomboy	Vermilion	72.63	0	0

Table 20

RETAIL FOOD PRICE ANALYSIS, WEEK ENDING MAY 29 and 30

Store	Address	Price Level Index	Last Week	Ranking Two Weeks Ago
		Week Ending May 29 and 30		
Discount	14735 - 125 Ave.	62.39	1	1
L-Mart	150 St. and Stony Plain Road	63.99	3	4
Econo-Mart	Red Deer	64.32	4	13
Safeway	11720 Jasper Ave.	64.82	2	8
Safeway	114 St. and 40 Ave.	65.13	5	10
Batemans	11224 - 76 Ave. (Tomboy)	65.22	12	7
Safeway	5120 - 122 St.	65.25	13	11
Safeway	5720 - 111 St.	65.35	10	17
Woodwards	Northgate 97 St. & 137 Ave.	65.45	18	25
Safeway	14920 - 87 Ave.	65.51	7	15
Safeway	9020 Jasper Ave.	65.55	8	16
Safeway	15020 Stony Plain Road	65.55	6	12
Safeway	156 St. & 87 Ave.	65.60	9	18
IGA	111 St. and 51 Ave.	65.81	16	27
Safeway	Centennial Mall	65.93	11	9
Woodwards	Westmount Shopping Centre	66.23	14	23
Safeway	12620 - 132 Ave.	66.51	15	26
Safeway	Paramount, Red Deer	66.77	19	51
IGA	11626 - 87 Ave.	67.00	17	24
Safeway	Port-O-Call, Red Deer	67.87	46	50
Co-Op	12725 - 82 St.	67.88	47	28
Dominion	Red Deer	68.53	48	52
Craig's	Vermilion	68.80	49	0
IGA	Red Deer	69.25	50	53
Patterson's	Wainwright	69.69	0	0
Tomboy	Wainwright	69.81	0	0
Co-Op	Plaza Shopping Centre, Red Deer	69.93	0	54
Super-A	Athabasca	70.13	0	0
Tomboy	Vermilion	70.83	57	0
Co-Op	Vermilion	72.63	56	0

Table 21

RETAIL FOOD PRICE ANALYSIS, WEEK ENDING JUNE 5 AND 6

Store	Address	Price Level Index	Last Week	Ranking Two Weeks Ago
		Week Ending June 5 and 6		
Co-Op	Barrhead	69.85	0	0
Linda's	Westlock	70.18	0	0
Buy Low	Westlock	70.46	0	0
Solo	Barrhead	70.79	0	0
IGA Foodline	Westlock	71.00	0	0
IGA	Barrhead	72.39	0	0

Table 22

RETAIL FOOD PRICE ANALYSIS, WEEK ENDING JUNE 12 AND 13

Store	Address	Price Level Index	Last Week	Ranking Two Weeks Ago
		Week Ending June 12 and 13		
Co-Op	Ponoka	67.77	0	0
IGA	Ponoka	68.37	0	0
Linda's	Westlock	68.43	2	0
IGA Foodline	Westlock	68.86	68	0
Buy Low	Westlock	69.82	3	0
Co-Op	Vegreville	70.62	0	0
Solo	Barrhead	70.78	67	0
IGA	Barrhead	71.05	69	0
Co-Op	Barrhead	71.36	1	0
IGA	Vegreville	72.55	0	0

Table 23

RETAIL FOOD PRICE ANALYSIS, WEEK ENDING JUNE 26 AND 27

Store	Address	Price Level Index	Last Week	Ranking Two Weeks Ago
		Week Ending June 26 and 27		
Solo	Barrhead	68.32	5	66
Linda's	Westlock	69.95	66	3
IGA	Barrhead	70.87	65	67
Buy Low	Westlock	71.04	3	5
Co-Op	Barrhead	71.40	2	68
IGA Foodline	Westlock	71.63	4	4

APPENDIX C

Legal Implications of Publishing Data

Dear Sir:

RE: Market Research

You indicated to us that you wanted to conduct a market survey whereby you would visit or cause to be visited various stores in Edmonton and elsewhere to record prices of various products. You then intended to gather the information and determine by examination which store sold what and for how much. You would then publish a statement by way of handbill or otherwise bringing to the attention of the general public that one store was less expensive than another etc., etc.

As you indicated, errors could creep into your computations or could be made by the persons gathering the information. Also the price might change before your report issued.

The situation gives rise to two possible areas of danger. The first is defamation, the second is negligence.

Defamation may be defined as those words, writings, actions, etc. which tend to lower a person in the estimation of right-thinking men or which cause him to be shunned or avoided or expose him to hatred, contempt or ridicule.

Where all of the facts which you have gathered are correct, you may make a comment on those facts and even if your comments are false and defamatory the law will protect you if

1. You are commenting on a matter of public interest. We think there is no problem in this regard as consumer prices are surely a matter of public interest.
2. The comment you make is fair, having regard to the facts.
3. You make your comments honestly and without malice and
4. The facts upon which you base your comments are correct.

If the facts upon which you make your comments are not correct, then the law will not give you any protection even though your comments are otherwise fair dealing with a matter in the public interest and are made honestly and without malice.

Therefore, it appears at the outset that unless you can avoid errors in your facts, i.e. the prices that you record and the computations that you make, you cannot avoid defamation.

Normally, the damages which a Court would award a person so defamed would be the actual loss that the person suffered. Hence, it would be necessary for that person in order to recover more than simply nominal damages to show that as a result of your false survey his sales decreased.

Only you can determine the effectiveness of your own surveys. Obviously the more effective your survey, the more dangerous the risk of damages from defamation. Also, you must keep in mind the difficulty of the defamed person in establishing his damages as any number of causes might result in a loss to him over one period of time judged against another period of time.

When I advised you that the chances of you avoiding defamation were in the circumstances slight, you were interested to know what steps you might take to protect yourself.

The first and most obvious step is to check with insurance companies to determine whether or not a policy of insurance could be obtained to protect you from this kind of liability.

The second step that you might consider is the creation of a limited company. My own recommendation would be that so long as you are a student, your ability to operate a market survey in a substantial manner will be restricted and that in all likelihood the risk that you run of a damage suit is slight. If, on the other hand, you set up your market survey as a commercial venture with reports being issued widely to the public on frequent occasions, the risks of a substantial damage suit are much greater.

So much of your risk depends on your ability to avoid error and the effectiveness with the public of your survey that it is very difficult for us to judge adequately the kind of risk which you run by this venture.

As I mentioned to you when you were in the office, persons are defamed day in and day out in our society but the difficulty of establishing damages and the danger of bringing the defamation to the public notice by commencing a lawsuit encourages most people to avoid defamation actions. They are in fact not very common having regard to the number of occasions on which actionable defamation obviously exists.

The second matter that concerned you was negligence. You wondered whether or not any person who relied on a report of yours which happened to be false and was thereby injured would have any action against you. Again, the answer appears to be yes. There appears to be growing in the law a rule that says if some person issues a report which he knows or should know will be relied upon by persons who come in contact with it that if the report is erroneous and the person relying on it suffers damages as a result thereof that person may recover those damages against the person issuing the report.

Again, the quantum of damages in any individual case will probably be so slight as to preclude any individual from bringing an action but the possibility of damages exists.

In this area it appears that the danger of a negligence action can be diminished or perhaps even be avoided by placing on the report the following or words to a like effect.

While the publishers believe the information and comment contained herein is correct, they disclaim all responsibility for such errors as may occur.

As you can see from a practical point of view when you take the steps necessary to avoid liability in negligence you virtually acknowledge that you are going to be liable to someone in defamation.

Frankly, I am unable to see a way out of this dilemma and suggest that your decision to proceed and the manner in which you proceed will have to be determined by the kind of damages which you consider you could possibly suffer as a result of one of your reports.

The problems that we have outlined here for you are precisely the problems that people like Dun and Bradstreet face day in and day out. They attempt to limit their liability by restricting the use of their services to subscribers and of course they build into the charges for their services some factor to cover the ever present possibility of negligence of defamation.

We hope that these comments will be of use to you.

¹ University Solicitors, Personal Letter, Edmonton, Alberta, January 30, 1970.

MEMORANDUM OF ASSOCIATION

OF

M.I.S. CONSULTING LTD.

REGISTERED
MAY 17 1970
THE REGISTRAR OF COMPANIES
PROVINCE OF ALBERTA

1. The name of the company is "M.I.S. Consulting Ltd."
2. The registered office of the Company will be situated in the City of Edmonton, in the Province of Alberta, or at such other place in the said Province as the Directors of the Company from time to time appoint.
3. The objects for which the Company is established are:-
 - (a) To collect, assemble, compile, organize, classify, compare, rank, and analyze food prices, in particular retail food prices;
 - (b) To organize, classify, compare, rank, and analyze any food organization, firm, chain, corporation, syndicate, partnership, enterprise or undertaking, in particular any retail food organization, enterprise or undertaking;
 - (c) To disperse, broadcast, spread, disseminate, apportion, allocate, and distribute food prices and food price information, in particular retail food price comparisons, rankings, classifications, organizations, computations, and analysis.
 - (d) To render consulting services to any aspect of the food industry, in particular to any person, group, organization, firm, chain, corporation, syndicate, partnership, enterprise or undertaking involved in food marketing or food consumption;
 - (e) To render managerial, supervisory or other services to any company, corporation, firm or business including farming of any nature, and to take part in the formation, management, supervision, control or liquidation of the business or operations of any company, corporation, firm or business
 - (i) having objects altogether or in part similar to those of the Company or having objects which include the acquisition of all or any of the assets or liabilities of the Company, or
 - (ii) in which the Company may be interested;

- (f) To render teaching, lecturing, and instructional services in the fields of economics, agriculture, business, management, and their allied fields;
- (g) To render consulting services in any field of marketing, in particular that of farm marketing as well as in the business of governmental and industrial fields;
- (h) To engage in and carry on business in all or any of their respective branches of the businesses of financial, commercial, industrial and management consultants.
- (i) To promote, organize, manage or develop or to assist in the promotion, organization, management or development of any corporation, company, syndicate, firm, partnership, enterprise or undertaking, or to take over, manage and dispose of in any manner whatsoever any business or undertaking in which the Company may be interested or in the securities of which it may have invested its funds or with which it may have business relations.

AND IT IS HEREBY DECLARED that in the interpretation of this Clause 3 in the meaning of the objects of the Company shall not be restricted by reference to or inference from the other object or the name of the Company or by the juxtaposition of two or more objects, and that in the event of ambiguity, this clause shall be construed in such manner as to widen and not to restrict the powers of the Company.

- 4. The liability of the members is limited.
- 5. The Company is authorized to issue Ten Thousand (10,000) Shares without nominal or par value, divided as follows:- Five Thousand (5,000) Class A Common voting shares and Five Thousand (5,000) Class B Common non-voting shares, the said Class A and Class B shares shall be equal in all respects except with regard to voting rights. The rights of any class of shares may not be altered without the consent of the majority of the shareholders within that class. The sale of such shares is not to exceed in the aggregate of \$10,000.00.
- 6. The capital of the Company may be increased, divided, converted, consolidated, and dealt with from time to time and any shares of the original capital when dealt with in accordance with the law then prevailing,

or new capital, may be issued having attached thereto any preferred, special, qualified, or deferred rights, privileges, conditions or restrictions including any preference or priority in the payment of dividends or the distribution of assets, voting or otherwise, over any other shares, whether common or preferred, and whether issued or not, and the regulations of the Company may be varied as far as necessary to give effect thereto.

7. Nothing herein contained shall be deemed to confer upon the Company any powers to which the jurisdiction of the legislature of the Province of Alberta does not extend, and particularly shall not be deemed to confer the right to issue Promissory Notes, in the nature of bank notes, and all powers in this Memorandum of Association contained shall be exercisable subject to the provisions of the laws in force in the Province of Alberta, and regulations thereunder, in respect of the matters therein referred to, and especially with respect to the construction and operation of railways, telephone and telegraph lines, the business of insurance or trust companies and any other business with respect to which special laws and regulations may now be, or may hereafter be put in force.

We, the persons whose names and addresses are subscribed are desirous of being formed into a Company in pursuance of this Memorandum of Association, and we respectively agree to take the number of shares in the capital of the Company set opposite our respective names:-

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